This handout is intended only as a guide and is based in part on the 2015 Minnesota Residential Code, local ordinances, and good building practice. While every attempt has been made to insure the correctness of this handout, no guarantees are made to its accuracy or completeness. Responsibility for compliance with applicable codes and ordinances falls on the owner or contractor. For specific questions regarding code requirements, refer to the applicable codes or contact your local Building Department.

**PLANS**

Building plans (two copies) must be submitted with an application to construct a garage or garage addition. Plans must be neatly drawn and to scale (at least 1/8” = 1 ft. min.). They may be on 8 ½ X 11 paper. Plans must include a site plan, floor plan, cross section and elevation. Plans should show the proposed size of the garage; location and size of window and door openings; size of headers over all window and door openings; size, spacing, and direction of rafters or trusses; rafter/truss connection method; size and spacing of studs; the grade and species of lumber to be used; the type of roof and wall sheathing used; information on siding and roofing; and any other pertinent information. If the garage exceeds 1000 square feet or an addition to an existing garage results in a garage over 1000 square feet, Minnesota law requires that the plans and design of the garage be prepared by a licensed design professional.

**FOUNDATIONS**

Detached garages that do not exceed 1000 square feet may be constructed on a thickened-edge slab. Detached garages over 1000 square feet and attached garages must be constructed on a foundation extending at least 42 inches below finished grade.

**WALL CONSTRUCTION**

Walls may be framed with minimum No. 3 grade studs spaced 16 or 24 inches on center. Utility grade studs may be used when supporting only a roof, spaced not more than 16 inches on center, and limited to 8 feet in height. All other studs shall be limited to ten feet in height. If a single top plate is used, rafters or trusses must be centered over studs. For walls over ten feet in height, see the Minnesota Residential Code.
WALL BRACING
All walls are required to be braced at each end of each wall by one of the following methods:

• Nominal 1X4 continuous diagonal braces let in to top and bottom plates and the intervening studs or approved metal straps installed in accordance with the manufacture’s specifications. Braces must be installed at an angle not to exceed 60 degrees or less than 45 degrees.
• 4X8 wood structural panel sheathing not less than 5/16 inch for 16-inch stud spacing and not less than 3/8 inch for 24-inch stud spacing. Sheathing must be attached with a minimum of 6d nails at 12 inches on center.
• 4X8 structural fiberboard sheathing not less than ½ inch thick applied vertically on studs spaced 16 inches on center. Sheathing must be attached with 1½ inch galvanized roofing nails, 6d common nails, or 16 ga 1½ inch staples spaced 3 inches on center around the perimeter and 6 inches on center on intermediate studs.

When garages are fully sheathed with wood structural panel sheathing, wall segments on either side of garage openings that support light frame roofs only with roof covering dead loads of 3 psf or less shall be permitted to have a 4:1 aspect ratio. For narrower wall segments, see the last page of this handout.

ROOF TRUSSESS
Wood trusses may be used as long as they are designed to meet state snow load requirements. Truss design drawings must be provided.

GARAGE DOORS
Garage doors must meet minimum wind resistance standards and must come with a label indicating the door complies with ANSI/DASMA 108.

GARAGE DOOR OPENERS
State law requires that all automatic garage door openers sold and installed be equipped with an automatic reversing device. This means that the door must have a means to reverse the closing function if something is detected in the path of the door.

ZONING REQUIREMENTS
Detached accessory structure sizes are based on lot size.

<table>
<thead>
<tr>
<th>LOT AREA</th>
<th>TOTAL SQUARE FOOTAGE</th>
</tr>
</thead>
<tbody>
<tr>
<td>LOTS LESS THAN 1 ACRE</td>
<td>720 SQ.FT.</td>
</tr>
<tr>
<td>1 ACRE- 2.49 ACRES</td>
<td>1,000 SQ.FT.</td>
</tr>
<tr>
<td>2.5 ACRES – 5 ACRES</td>
<td>2,000 SQ.FT.</td>
</tr>
<tr>
<td>5.01 ACRES – 20 ACRES</td>
<td>2,500 SQ.FT.</td>
</tr>
</tbody>
</table>

A maximum of two (2) detached accessory buildings are allowed per lot.

No garage or accessory building shall exceed ONE STORY.

Impervious surface requirements for the property will be checked upon application and could affect the allowable size.
INSPECTIONS

It is the responsibility of the permit applicant to call the Building Department to arrange for the inspections. 24-hour advance notice is required. Inspections typically required for the construction of a garage are:

- Footing and foundation inspections (attached garages only) after form work is in place but prior to pouring concrete.
- Slab Inspection – To be made after all formwork and reinforcing is in place but prior to the pouring of concrete.
- Framing Inspection – To be made after all framing and bracing is complete, rough electrical (if any) is approved, but prior to the application of siding or roofing.
- Final Inspection – To be made upon completion of the garage and grading is complete.

<table>
<thead>
<tr>
<th>Span</th>
<th>20 Ft</th>
<th>24 Ft</th>
<th>28 Ft</th>
</tr>
</thead>
<tbody>
<tr>
<td>Up to 3 ft</td>
<td>2-2X4</td>
<td>1</td>
<td>2-2X4</td>
</tr>
<tr>
<td>Up to 4 ft</td>
<td>2-2X6</td>
<td>1</td>
<td>2-2X6</td>
</tr>
<tr>
<td>Up to 6 ft</td>
<td>2-2X8</td>
<td>2</td>
<td>2-2X10</td>
</tr>
<tr>
<td>Up to 7 ft</td>
<td>2-2X10</td>
<td>2</td>
<td>2-2X12</td>
</tr>
<tr>
<td>Up to 8 ft</td>
<td>2-2X12</td>
<td>2</td>
<td>3-2X10</td>
</tr>
<tr>
<td>Up to 9 ft</td>
<td>3-2X10</td>
<td>2</td>
<td>3-2X12</td>
</tr>
<tr>
<td>Up to 10 ft</td>
<td>3-2X12</td>
<td>2</td>
<td>4-2X12</td>
</tr>
<tr>
<td>Up to 12 ft</td>
<td>4-2X12</td>
<td>2</td>
<td>*EWPR</td>
</tr>
<tr>
<td>Over 12 ft</td>
<td>*EWPR</td>
<td>*EWPR</td>
<td>*EWPR</td>
</tr>
</tbody>
</table>

*Engineered wood product required
For truss to wall, rafter to wall, and rafter to ceiling joist connections, the Big Lake Building Department has a handout titled *Truss/Rafter to Wall Connections* that provides specific direction on those connections.
FOUNDATION DETAIL FOR ATTACHED GARAGE

- ½" anchor bolts 7" min into foundation, 6' spacing max, 3 ½" to 12 inches from ea. end of ea. piece, 2 bolts per piece
- 3 ½ inch thick concrete floor 3500 PSI Min. Comp. Strength
- Reinforcement must be supported in center to upper 1/3rd of slab
- 4" base course of sand/gravel
- Treated plate if less than 8 inches from ground or in contact with slab
- Grade
- 42" Min.
- 6" Concrete or 8" Masonry foundation

Concrete footing 6" deep min. X width of foundation plus 4" wide

SEPARATION WALL DETAIL FOR ATTACHED GARAGE

One layer ½" gypsum board applied on garage side of wall between house and garage. No windows. Doors to dwelling must be solid wood or metal. Alt. Gypsum board may stop at ceiling if ceiling is covered with ½" gypsum board (5/8" if living space above) and walls supporting the ceiling are covered with ½" gypsum board.
WALL BRACING

FRONT ELEVATION

4 Ft X 8 Ft 5/16” (16” o.c.) or 3/8” (24” o.c.) wood structural panels or ½” structural fiberboard sheathing or let-in bracing

SIDE OR REAR ELEVATION

WALL BRACING FOR NARROW WALLS

EXTENT OF HEADER DOUBLE PORTAL FRAME (TWO BRACED WALL PANELS)

EXTENT OF HEADER SINGLE PORTAL FRAME (ONE BRACED WALL PANEL)

MIN. 3” X 11.25” NET HEADER

6” TO 18’

1000 LB STRAP

FASTEN TOP PLATED TO HEADER WITH TWO ROWS OF 16D SINKER NAILS AT 3 O.C. TYP.

MIN. DOUBLE 2X4 POST

TYPICAL PORTAL FRAME CONSTRUCTION

FOR 9 PANEL SPlice (IF NEEDED), PANEL EDGES SHALL BE BLOCKED, AND OCCUR WITHIN 24” OF MID HEIGHT. ONE ROW OF TYP. SHEATHING-TO-FRAMING NAリング IS REQUIRED. IF 2X4 BLOCKING IS USED, THE 2X4'S MUST BE NAILED TOGETHER WITH 3-16D SINKERS

MIN. 1000 LB TIE-DOWN DEVICE

ALTERNATE BRACED WALL PANEL ADJACENT TO A DOOR OR WINDOW OPENING

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