



Building Guide

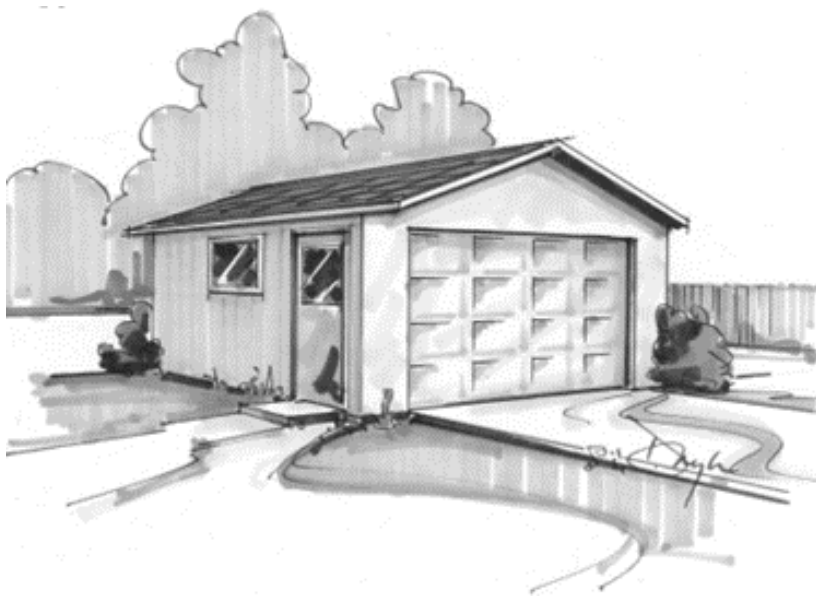
Colorado Chapter of the International Code Council

SINGLE FAMILY RESIDENTIAL ONE-STORY DETACHED GARAGE

How to Use this Guide

Check with your jurisdiction regarding type of submittal (paper or electronic) and additional requirements. Draw to scale and complete the following (*hint: use graph paper with 1/4" squares. Example: 1/4" = 1'*).

1. **Complete this building guide** by filling in the blanks on page three through five and indicate which construction details will be used.
2. **Provide 2 plot plans** (site plans) showing the dimensions of your project and its relationship to existing buildings and/or structures on the property. The distances to the existing property lines shall be drawn to scale. See page 2.
3. **Fill out building permit application.** Most permit applications are processed with little delay. The submitted documents will help determine if the project follows building safety codes, zoning ordinances and other applicable laws.



The Colorado Chapter of the International Code Council is a professional organization seeking to promote the health, safety, and welfare to building construction. We appreciate your feedback and suggestions. To obtain a master copy of this building guide, please write to the Colorado Chapter of the International Code Council, P.O. Box 961, Arvada, CO 80001. www.coloradochaptericc.org

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04/01/26

Directions

1. Fill in the blanks on pages 2 through 5 with address, dimensions, and material which will be used to build the structure. Please print legibly.
2. Indicate in the check boxes on page 4 which details from page 5 will be used.
3. Note: Conditioned garages will require insulation, such as ceilings, walls, and foundation insulation. If the garage is conditioned, check with the AHJ for additional requirements.

FLOOR PLAN

Dimension _____

Locate and detail bracing

✓ Check one
IS THE GARAGE CONDITIONED
(HEATED AND/OR COOLED)?
☐ YES ☐ NO

Show door and window header sizes and
location and size of landing in front of door

✓ Check one
Indicate rafter or
truss direction

3 1/2" minimum concrete slab

() x header
(example: (2) 2 x 12)

Note:
If roof trusses or rafters bear on header,
special header design may be required

Double 2x4 or 2x6 trimmers each
end of overhead door header

Garage door opening _____

Garage door opening width _____

Dimension* _____

Dimension* _____

Dimension _____

Floor slope

* If less than 4' see Braced Wall Panel Detail on
page 5 to comply with section R602.10.6.2 (IRC)
(minimum width 16" with wall 10' high)

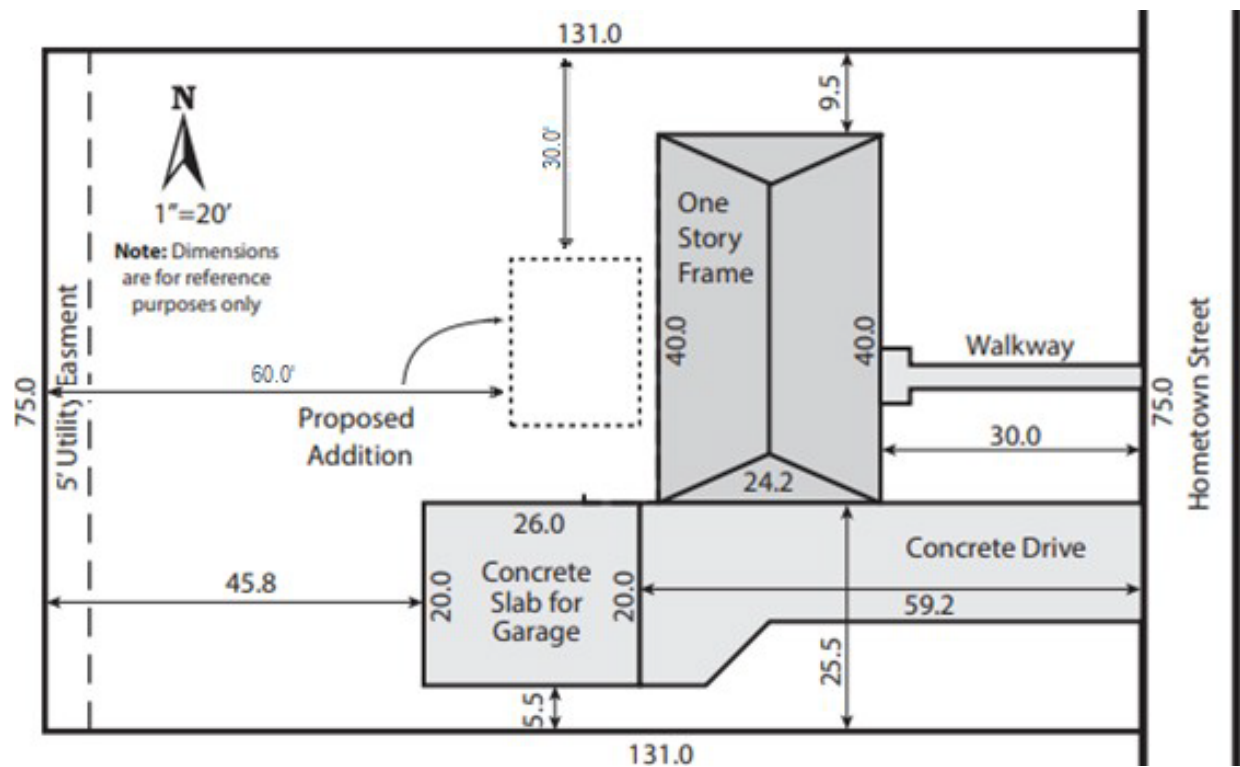
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ADDRESS

SITE PLAN EXAMPLE



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Max, 10' wall height

Lap siding over foundation a minimum of 1".

1/2" x 10" steel anchor bolts 6'-0" O.C. max., 7" min. penetration max. 12" from corner and 12" from each end of plate (min. 2 bolts per plate).

Bottom plate shall be treated or be separated from concrete by an impervious moisture barrier and be 8" above grade.

3 1/2" Minimum Concrete Slab

6"

Finished grade

CHECK WITH AHJ FOR FROST DEPTH REQUIREMENTS

12"

3"

#4 rebar min. cont. top & bottom with 18" laps

Note: Check with local building department for swelling soils. Caissons may be required.

The diagram illustrates the construction of a caisson foundation. Key components and requirements include:

- Lap siding over foundation:** A minimum of 1" overlap is required.
- Steel anchor bolts:** 1/2" x 10" steel anchor bolts, 6'-0" O.C. max., with 7" min. penetration max. 12" from corner and 12" from each end of plate (min. 2 bolts per plate).
- Bottom plate:** Shall be min. 8" above grade, or be treated wood or decay resistive wood.
- Concrete slab:** 3 1/2" Minimum concrete slab.
- Fiberboard expansion joint:** Indicated by a horizontal line across the stemwall.
- Rebar:** Provide #4 rebar vert. @ 4'-0" O.C., insert rebar into concrete footing or key way. #4 rebar min. continuous top of stemwall & at footing with 18" laps.
- Grade:** Finished grade is indicated by a horizontal line.
- Frost Depth:** Check with jurisdiction for frost depth requirements.
- Note:** Check with local building department for swelling soils. Caissons may be required.

EXTENT OF HEADER WITH DOUBLE PORTAL FRAMES (TWO BRACED WALL PANELS)
 EXTENT OF HEADER WITH SINGLE PORTAL FRAME (ONE BRACED WALL PANEL)
 2'-18" FINISHED WIDTH OF OPENING FOR SINGLE OR DOUBLE PORTAL
 MIN. 3"x11½" NET HEADER STEEL HEADER PROHIBITED IF ½" SPACER IS USED, PLACE ON BACK-SIDE OF HEADER
 FASTEN SHEATHING TO HEADER WITH 8D COMMON OR GALVANIZED BOX NAILS IN 3" GRID PATTERN AS SHOWN
 HEADER TO JACK-STUD STRAP PER TABLE R602.10.6.4 ON BOTH SIDES OF OPENING OPPOSITE SIDE OF SHEATHING
 MIN. DOUBLE 2x4 FRAMING COVERED WITH MIN. ¾" THICK WOOD STRUCTURAL PANEL SHEATHING WITH 8D COMMON OR GALVANIZED BOX NAILS AT 3" O.C. IN ALL FRAMING (STUDS, BLOCKING, AND SILLS) TYP.
 MIN. LENGTH OF PANEL PER TABLE R602.10.5
 MIN. (2) 3500 LB STRAP-TYPE HOLD-DOWNS (EMBEDDED INTO CONCRETE AND NAILED INTO FRAMING)
 MIN. REINFORCING OF FOUNDATION, ONE #4 BAR TOP AND BOTTOM OF FOOTING, LAP BARS 15" MIN.
 MIN. FOOTING SIZE UNDER OPENING IS 12"x12". A TURN-DOWN SLAB SHALL BE PERMITTED AT DOOR OPENINGS.
 MIN. (1) ½" DIAMETER ANCHOR BOLT INSTALLED PER SECTION R403.1.6 - WITH 2"x2" x ½" PLATE WASHER
 TENSION STRAP PER TABLE R602.10.6.4 (ON OPPOSITE SIDE OF SHEATHING)
 IF NEEDED, PANEL SPLICE EDGES SHALL OCCUR OVER AND BE NAILED TO COMMON BLOCKING WITHIN THE MIDDLE 24" OF THE PORTAL-LEG HEIGHT. ONE ROW OF 3" O.C. NAILING IS REQUIRED IN EACH PANEL EDGE.
 TYPICAL PORTAL FRAME CONSTRUCTION
 MIN. DOUBLE 2x4 POST (KING AND JACK STUD). NUMBER OF JACK STUDS PER TABLES R602.7(1) & (2).
 MIN. 1000 LB. HOLD-DOWN DEVICE (EMBEDDED INTO CONCRETE AND NAILED INTO FRAMING).
 FASTEN KING STUD TO HEADER WITH 6 16D SINKERS
 FASTEN TOP PLATE TO HEADER WITH TWO ROWS OF 16D SINKER NAILS AT 3" O.C. TYP.
 MIN. ¾" WOOD STRUCTURAL PANEL SHEATHING
 12' MAX. TOTAL WALL HEIGHT
 10' MAX. HEIGHT
 PONY WALL HEIGHT

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TRUSS OR 2X _____ RAFTERS SPACED @ _____" O.C.
(EXAMPLE: CHECK THE BOX IF USING TRUSSES -OR- 2 X 10" RAFTERS SPACED 24" O.C.)

CEILING INSULATION R-VALUE _____
(EXAMPLE: R-49)

MINIMUM 1 X _____ RIDGE BOARD
(EXAMPLE: 1 X 12")

WALL INSULATION R- VALUE _____

ROOF PITCH _____:_____
(EXAMPLE: 4:12)

SHEATHING _____ (EXAMPLE: ½" EXTERIOR PLYWOOD)

*ROOF COVERINGS _____
(EXAMPLE: CLASS A 3 TAB)

UNDERLAYMENT _____
(EXAMPLE: 15# FELT WITH 19" LAPS)

DOUBLE 2X _____ TOP PLATE
(EXAMPLE: 2 X 6)

SPAN _____' _____"
(EXAMPLE: 23' 5")

CEILING HEIGHT _____' _____"
(EXAMPLE: 8')

SIDING _____
(EXAMPLE: JAMES HARDIE PLANK LAP)

WALL SHEATHING _____
EXAMPLE: ½" EXTERIOR PLYWOOD)

2X _____ STUDS @ _____" O.C.
(EXAMPLE: 2 X 6 @ 24" O.C.)

CONT. 2X _____ SILL PLATE
(EXAMPLE: 2 X 6 DECAY RESISTANCE)

FOOTING SIZE _____" X _____"
(EXAMPLE: 8" X 16")

FOUNDATION INSULATION R-VALUE _____
(EXAMPLE: R10 2 FT DOWN)

WOOD SPECIES & GRADE _____

(EXAMPLE: SP #2)

IS THE GARAGE CONDITIONED (HEATED AND/OR COOLED)? ☐ YES ☐ NO

* IF THE GARAGE WILL BE CONDITIONED CHECK WITH THE AHJ FOR ADDITIONAL REQUIREMENTS.

Provide roof tie downs
Solid 2x blocking between rafters that are 2x12 or greater

1 X 4" COLLAR TIE @ 48" O.C.
OR RAFTER TIE PER R802.4.5

Span

Note: Pre-engineered roof trusses w/truss clips may be used in lieu of roof structure shown.

Diagonal wind bracing or braced wall panels @ corners and each 20' of wall.
Check with authority having jurisdiction for max wall height

Concrete Encased Ground required for new service

✓ Check one
☐ Foundation Detail A
☐ Foundation Detail B
(see page 5)

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