Building Guide
Colorado Chapter of the International Code Council

Single Family Residential
One Story Detached Garage

How to Use this Guide
Provide two sets of plans, drawn to scale and complete the following (hint: use graph paper with ¼” squares. Example: ¼” = 1’):

1 Complete this Building Guide by filling in the blanks on page two and three, and indicating which construction details will be used.

2 Provide 2 Plot Plans (site plan) showing dimensions of your project and its relationship to existing buildings or structures on the property and the distance to existing property lines, drawn to scale.

3 Fill out a building permit application.

The majority of permit applications are processed with little delay. The submitted documents will help determine if the project is in compliance with 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 public 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. http://www.coloradochaptericc.org

This handout was developed by the Colorado Chapter of the International Code Council as a basic plan submittal under the 2009 International Residential Code. It is not intended to cover all circumstances. Check with your Department of Building Safety for additional requirements.
Directions

1. Fill in the blanks on pages 2 and 3 with dimensions and materials which will be used to build the structure. Please print legibly.

2. Indicate in the check boxes on page 3 which details from page 4 will be used.

Note: Heated garages will require insulation, such as ceilings, walls, and foundation.

Floor Plan

- Dimension ___________
- Locate and detail bracing
- Indicate rafter or truss direction
- Check one
  - Garage is heated
  - Garage is not heated
- Show door and window header sizes and location and size of landing in front of door
- 3 1/2” minimum concrete slab
- ( ) _____ x _____ header
  (example: (2) 2 x 10
- 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*_______
- * If less than 4’ see Braced Wall Panel Detail on page 4 to comply with section R602.10.3.3 (IRC)

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**Note:** For roofs with slopes less than 4:12, follow manufacturer’s instructions for low slope application of roofing material.

- **Truss or 2x** rafters spaced **"** O.C.  
  (example: Put checkmark in box -or- 2 x 10 Rafters Spaced 24" O.C.)
- **Minimum 1x** ridge board  
  (example: 1 x 12)
- **Diagonal wind bracing or braced wall panels** @ corners and each 25’ of wall.

### Building Section

- **Foundation Insulation**  
  (If heated - example: R-10)
- **Wall Insulation**  
  (If heated - example: R-20 Fiberglass Batts)
- **Wall sheathing**  
  (example: ½" exterior plywood)
- **Wall insulation**  
  (example: lap or T-111)
- **Siding**  
  (example: 2 x 6 @ 24" O.C.)
- **Sheathing**  
  (example: ⅜" exterior plywood)
- **Roof covering**  
  (example: Class A 3 tab shingles)
- **Underlayment**  
  (example: 1 layer 15# felt)
- **Ceiling Insulation**  
  (If heated - example: R-38)
- **Floor joists** @ O.C.  
  (example: 2 x 8 @ 24" O.C.)
- **Double 2x** top plate  
  (example: 2 x 6)
- **Span**  
  (example: 23’ 5")
- **Ceiling height**  
  (example: 8’)
- **Footing size** x  
  (example: 8” x 16”)
- **Cont. 2x** sill plate  
  (example: 2 x 6)
- **Truss or 2x** wall studs @ O.C.  
  (example: 2 x 6 @ 24" O.C.)

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Foundation Detail A

- 1/2" x 10" steel anchor bolts 6'-0" O.C. max., 7" min. penetration max. 12" from corner and 12" from 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.
- #4 rebar min. conf. top & bottom with 18" laps

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

Foundation Detail B

- 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 min. 8" above grade, or be treated wood or decay resistive wood
- Fiberboard expansion joint

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

Braced Wall Panel Detail figure 602.10.3.3

- Extent of header
  - Double portal frame (two braced wall panels)
  - Single portal frame (one braced wall panel)
- Min. 3" x 11.25" Net Header
- 1,000 lb. strap opposite sheathing
- Fasten top plate to header with two rows of 16D sinker nails at 3° O.C. typ.
- Fasten sheathing to header with 8D common or galvanized box nails in 3° grid pattern as shown and 3° O.C. in all framing (studs, blocking, and sills) typ.
- Min. width = 16" for one story structures
  - Min width = 24" for use in the first of two story structures
- Min. 2x4 framing
- 3/8" min. thickness wood structural panel sheathing
- Min. 4,200 lb. tie-down device (embedded into concrete and nailed into framing)

Min. double 2x4 post

For a panel splice (if needed), panel edges shall be blocked, and occur within 24° of mid-height. One row of typ. sheathing-to-framing nailing is required. If 2x4 blocking is used, the 2x4's must be nailed together with 3 16D sinkers

Min. 1,000 lb. tie down device

See Section R602.10.3.3

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