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## Single Family Residential Basement Finish Guide

### How to Use this Guide

Provide a digital set of plans on a USB/flashdrive or a PDF attachment in an email to [building.inspection@longmontcolorado.gov](mailto:building.inspection@longmontcolorado.gov) and complete the following:

- 1 Review this Building Guide
- 2 Provide floor plans.  
Drawn to scale or exact dimensions including unfinished areas, to be indicated on plans - See example on page 5.
- 3 Fill out a Building Permit Application.  
The submitted documents will help determine if the project is in compliance with building safety codes, zoning ordinances and other applicable laws.  
Plans are reviewed in the order in which they are received. One set of the approved plans will be returned to you with any corrections noted, when the permit is issued. Inspections will not be done without approved plans on site at time of inspection
- 4 Submittals can be done electronically.

Smoke alarms & Carbon Monoxide Detectors can be hard-wired, battery operated or plug in. Smoke alarms (SD) are required in new and existing bedrooms, halls and one each level. Carbon Monoxide detector are required 15 feet from bedroom entrances. Hallways are the most common place.



Based on graphics and information developed by the Colorado Chapter of the International Code Council.

# Single Family Residential Basement Finish

## General Permit Information

A building permit is required anytime there is new construction or addition, alteration, repair or demolition to the main structure or accessory structure on a lot or parcel.

If you have questions about whether or not a permit is required, contact the Building Inspection Division, Development Services Center, Longmont, Colorado, 80501, (303) 651-8332.

The issuance of permits and subsequent inspections of the work performed ensures that all construction in the city is safe and in compliance with the City of Longmont Zoning and Building Codes. The primary purpose of these codes is to ensure a safe and healthy environment for the citizens of Longmont.

Permits are reviewed and issued at the Building Inspection Division office located at the Development Services Center, 385 Kimbark St. The office is open from 8:00 AM to 5:00 PM Monday - Friday. Call (303) 651-8332 for information.

As a homeowner you can act as your own contractor and work on the property where you reside without a contractor's license. You may subcontract parts of a project. Anyone you hire, however, must be insured and licensed with the City of Longmont. You are responsible for scheduling inspections and for follow up on the permit being finalized.

**CAUTION:** If you do work, or have any work done without obtaining a permit, you could be incurring liability in the event of a fire or accident related to the work. In some circumstances, your insurance could be invalidated.

### **Please Note:**

- ⇒ **NOISE:** The Longmont Municipal Code prohibits making unreasonable noise which would cause a person of ordinary sensitivities significant annoyance and irritation.
- ⇒ **CONSTRUCTION DEBRIS & TRASH:** The Longmont Municipal Code requires debris and trash be contained on the job site.



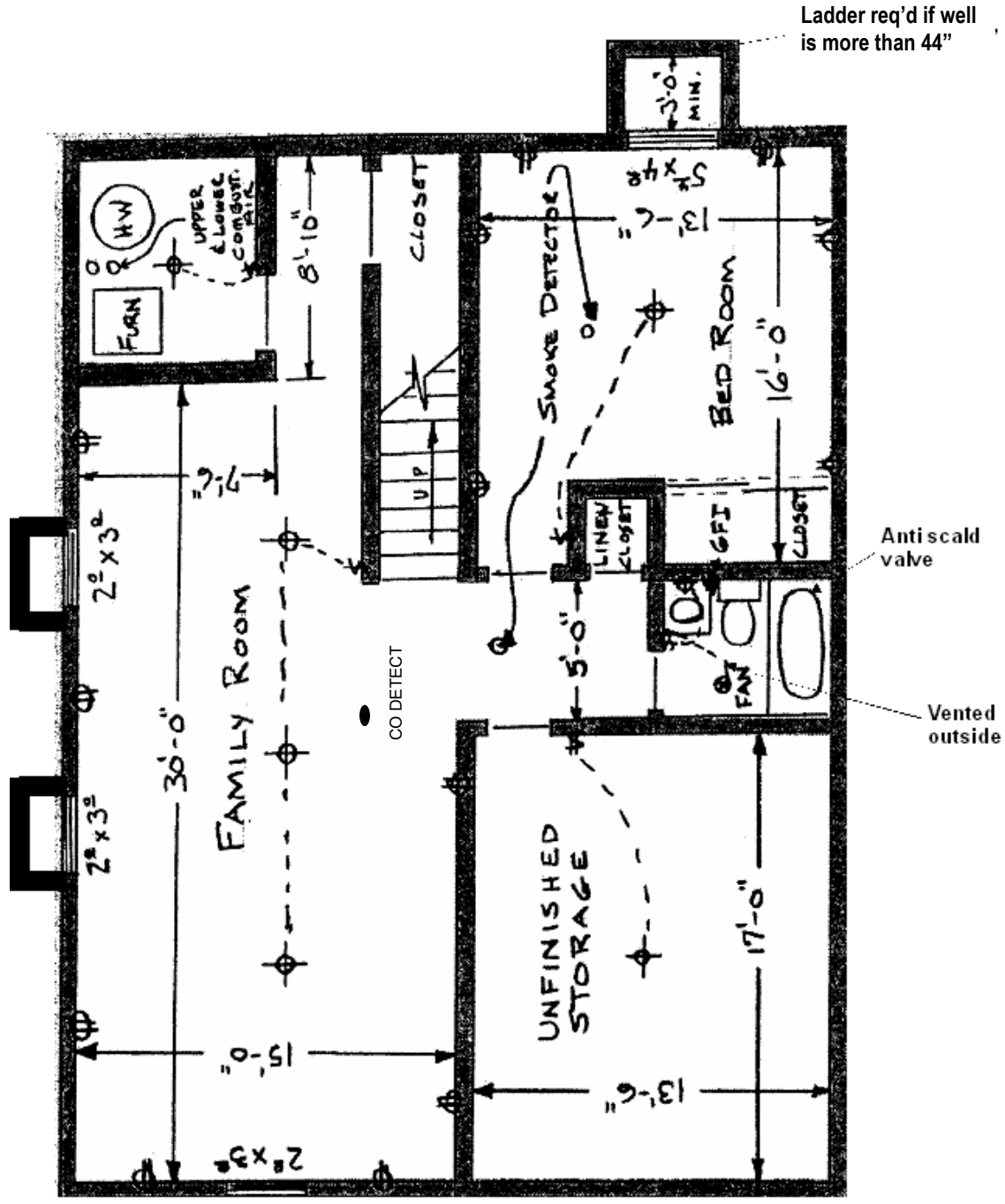
# Single Family Residential Basement Finish

## Directions

- 1 Submit one permit application.
- 2 Draw a floor plan with dimensions drawn close to scale, showing the layout of the entire basement. Label the use of each room, water heater & furnace location in mechanical room & tub/shower, sink & toilet in bathrooms. **Submit a complete digital set of floor plans.** See example page 5.
- 3 Show electrical outlets, smoke detectors, lighting, fans, plumbing modifications, cleanouts, furnace, and water heater location & dimensions.
- 4 Show location and size of windows, doors, stairs and window wells. Identify emergency escape and rescue windows, and egress window wells with ladder.
- 5 Indicate locations of plumbing fixtures, water heater, furnace with dimensions for clearance, boiler, air conditioner and any cooking appliances. Identify modifications to the existing structure such as posts, beams and floor joists.
- 6 Indicate height of dropped ceiling areas.
- 7 Letter from an engineer (if cutting new windows, widening existing windows in concrete or changing structural beams or posts). This letter shall address lintel/header over window if structural modifications are being made.
- 8 Type, size R-value of insulation in walls and ceiling. Also the floor if applicable. (if installing door to exterior).
- 9 Fireplace or stove location, type and installation details.
- 10 Show location and size of exhaust fans and combustion air ducts.
- 11 Provide location of smoke and carbon monoxide detectors.

NOTE: IF YOUR BASEMENT IS  
EQUIPPED WITH FIRE SPRINKLERS  
YOU MUST OBTAIN A FORM FROM  
THE BUILDING INSPECTION DIVISION  
FOR THE FIRE SPRINKLER CON-  
TRACTOR TO FILL OUT AND THAT  
FORM MUST BE SUBMITTED WITH  
PLANS FOR PLAN REVIEW.

# Sample Floor Plan – Residential Basement Finish



## Basement Finish Requirements

- 1 Ceiling Height. Habitable rooms may have a ceiling height of not less than 7'-0" as measured from the finished floor to the ceiling. Beams, pipes, and ducts may project from the ceiling not less than 6'-4" from the finished floor.
- 2 Stairway Fire Protection. If space under the stairs is enclosed accessible space for storage, a minimum of one layer of 1/2" gypsum board is required to be installed on the inside of walls, and under stair.
- 3 Heating And Return Air. All habitable rooms are to be provided with heat. Return air is required for forced air heating systems in all habitable rooms. Storage areas need not be heated.
- 4 Smoke Detectors. Smoke detectors shall be installed throughout the entire house, located as required for new buildings. Smoke detectors shall be installed in each bedroom and at a point centrally located in the hall or area giving access to each separate bedroom. Smoke detectors must also be installed on each story, basement and at any change in ceiling height of more than 24". Additional detectors may need to be installed dependent upon the configuration of the house as verified by the Building Inspector during inspection.
- 5 Carbon Monoxide Detectors. Carbon monoxide detectors (CO) are required to be installed within 15 feet of the entrance to every bedroom in any location on the wall or ceiling.
- 6 Combustion Air. Fuel burning furnaces and water heaters are required to be provided with combustion air obtained from outside. The required size and placement of combustion air ducts is determined by the *International Residential Code*.
- 7 Emergency Egress Windows. Every basement and each bedroom is required to have at least one operable window or door approved for emergency escape or rescue which shall open directly to the exterior. The door or window shall be operable from the inside without the use of special tools. All escape or rescue windows shall have a minimum clear openable area of 5 square feet. The minimum net clear openable height shall be 24 inches. The minimum net clear openable width shall be 20 inches. The maximum finished sill height shall be 44 inches above the finished floor. Exterior window areaways (window wells) provided for escape or rescue windows shall be at least as wide as the window and at least 36 inches out from the house. ("Existing" wells installed on houses built between 3-30-86 and 01-01-96 may be 30" and wells installed on houses built prior to 3-30-86 may be 24") All window wells with a vertical depth of more than 44" shall be equipped with a permanently affixed ladder.  
See page 8 for diagrams and details.
- 8 Light, Ventilation And Sanitation. All habitable rooms are to be provided with natural light and ventilation by means of exterior glazed openings with an area of not less than (8%) of the floor area or artificial light as approved by the building official. Natural ventilation is required with minimum openable area of (4%) of the floor area being ventilated. Habitable rooms are any space used for living, eating, sleeping or cooking. Bathrooms, toilet compartments, closets, halls, storage or utility space, and similar areas are not considered habitable space.
- 9 Bathrooms. Water closets must be provided with a minimum of 21 inches in front of the water closet and 15 inches between the center of the water closet and any sidewall or other obstruction. Showers shall have a minimum inside dimension of 900 square inches, capable of encompassing a 30 inch circle and be finished 70 inches above the drain with non-absorbent materials. A ventilation fan is required in bathrooms with un-openable windows and bathrooms with a tub or shower. The fan must be vented to the exterior of the building using listed vent pipe.
- 10 Insulation. All perimeter below grade walls require R-10 continuous or R-13 cavity insulation.

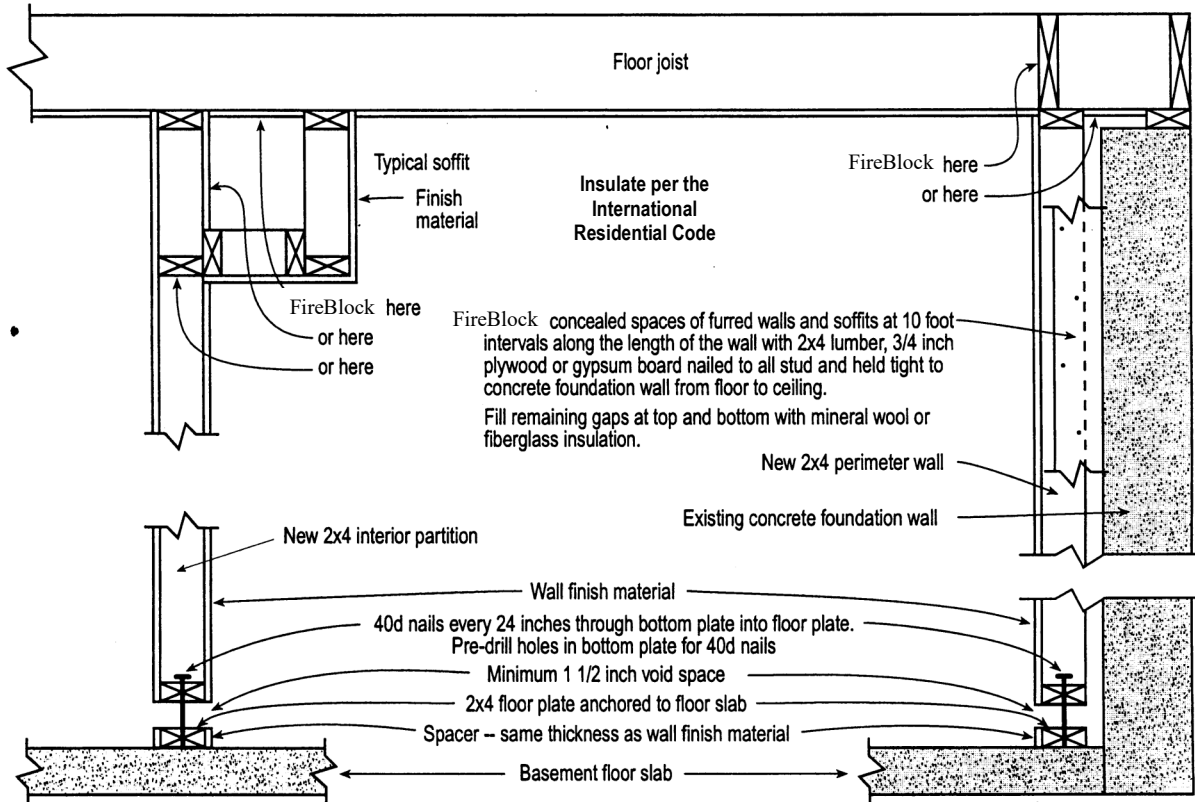
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**The Building Department staff can help you determine what is necessary to meet minimum safety requirements.**

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- 10 **Floated Walls.** Non-bearing walls on basement floor slabs should be built to accommodate not less than 1-1/2 inches of floor movement. A detail of a typical floated wall is shown below. Drywall should be held to a minimum of 1 inch above the slab to allow for movement.
- 11 **Fireblocking.** Fireblocking must be installed in concealed spaces of wood-furred walls at the ceiling level, at 10-foot intervals along the length of the wall and at all interconnections of concealed vertical and horizontal spaces such as intersection of stud walls and soffits or dropped ceilings. A detail of typical fireblocking is included below. Fireblocks may be constructed of 1-1/2 inch lumber, 3/4 inch plywood or particle board, gypsum board or fiberglass insulation, securely fastened.
- 12 **Fuel Burning Appliances.** Furnaces and water heaters cannot be located in a bedroom or bathroom unless appliances are installed in a dedicated enclosure in which all combustion air is taken directly from outdoors, and a weather stripped solid door equipped with an approved self closing device is installed. If the furnace and water heater are being enclosed, adequate combustion air must be provided for these appliances to operate properly. For maintenance purposes, a minimum of 30 inches clear working space must be provided in front of furnaces and water heaters. Maintenance or removal of each appliance must be possible without removing the other or disturbing walls, piping, valves, wiring and junction boxes.

### Basement Finish Details



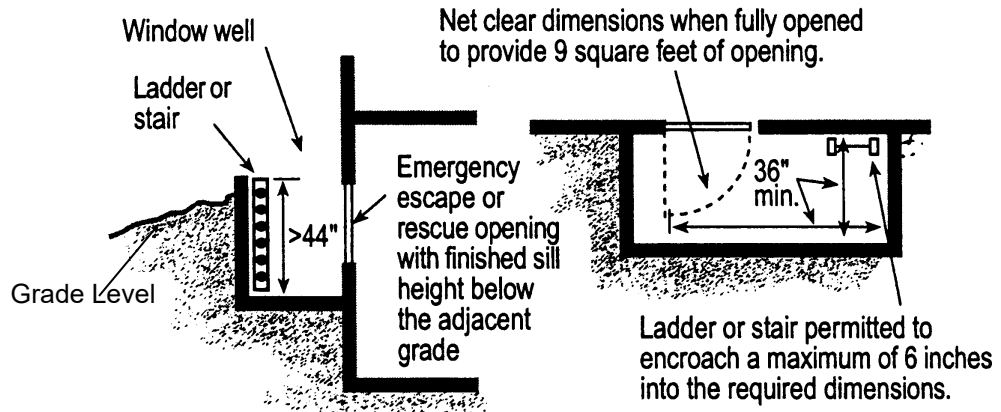
# Single Family Residential Basement Finish

## Basement Finish Windows

### Emergency Escape & Rescue Window Well

Emergency Escape And Rescue window wells must provide a minimum area of 9 square feet with a minimum dimension of 36 inches and shall enable the window to open fully. If the depth of the window well exceeds 44 inches, a permanently affixed ladder must be provided. The ladder must not interfere with the operation of the window.

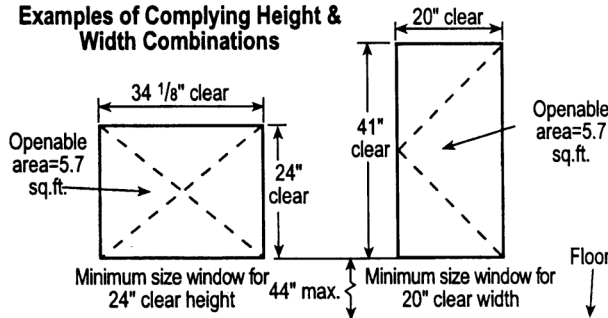
#### Emergency Escape and Rescue Window Clearances



- Emergency Escape And Rescue Windows must meet the following criteria:
- A minimum total openable area of not less than 5.7 square feet
  - A minimum clear openable height of not less than 24 inches
  - A minimum clear openable width of not less than 20 inches.
  - A finished sill height of not more than 44 inches above the floor and should be operable from the inside without the use of separate tools, knowledge or effort.

R310.2..1 Exception: Grade floor or below grade openings shall have a net clear opening of not less than 5 square feet.

#### Examples of Complying Height & Width Combinations



#### Emergency Escape and Rescue Window Area

Note: cutting into any existing foundation wall requires a letter from a licensed Colorado engineer.