

# **Building Codes**

# Building Codes

**\*Building codes are designed to protect consumers by providing minimum guidelines for construction and inspection of a structure.**

**\*The two main groups that write building codes for construction are the IRC (International Residential Code) and the UBC (Uniform Building Code).**





# Building Codes

**Drafters are expected to be knowledgeable of the contents of the codes and how they effect the construction of a structure.**





# Building Codes

**R-3 is the group occupancy category that relates to single family dwellings and apartments with less than 10 inhabitants.**





# Building Codes

Each dwelling must have a minimum of one exit door that is at least 36 inches wide and 6'-8" high. A floor or landing is required on each side of an exterior door. This landing must be a minimum of 3 foot by 3 foot in size.

\*The top of the doors and windows are 6'-8" from the floor.

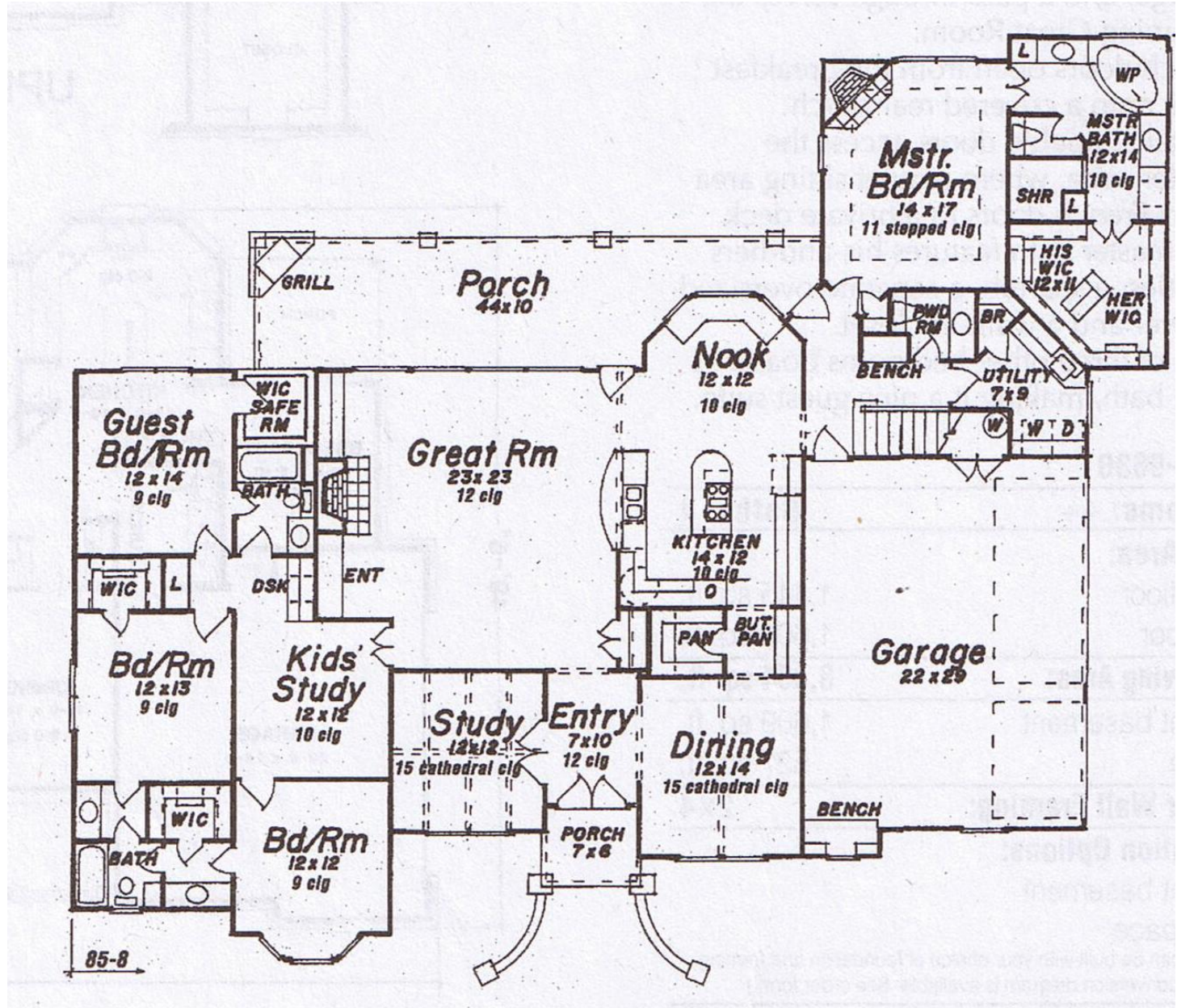




# Building Codes

The following rooms are classified as habitable rooms:

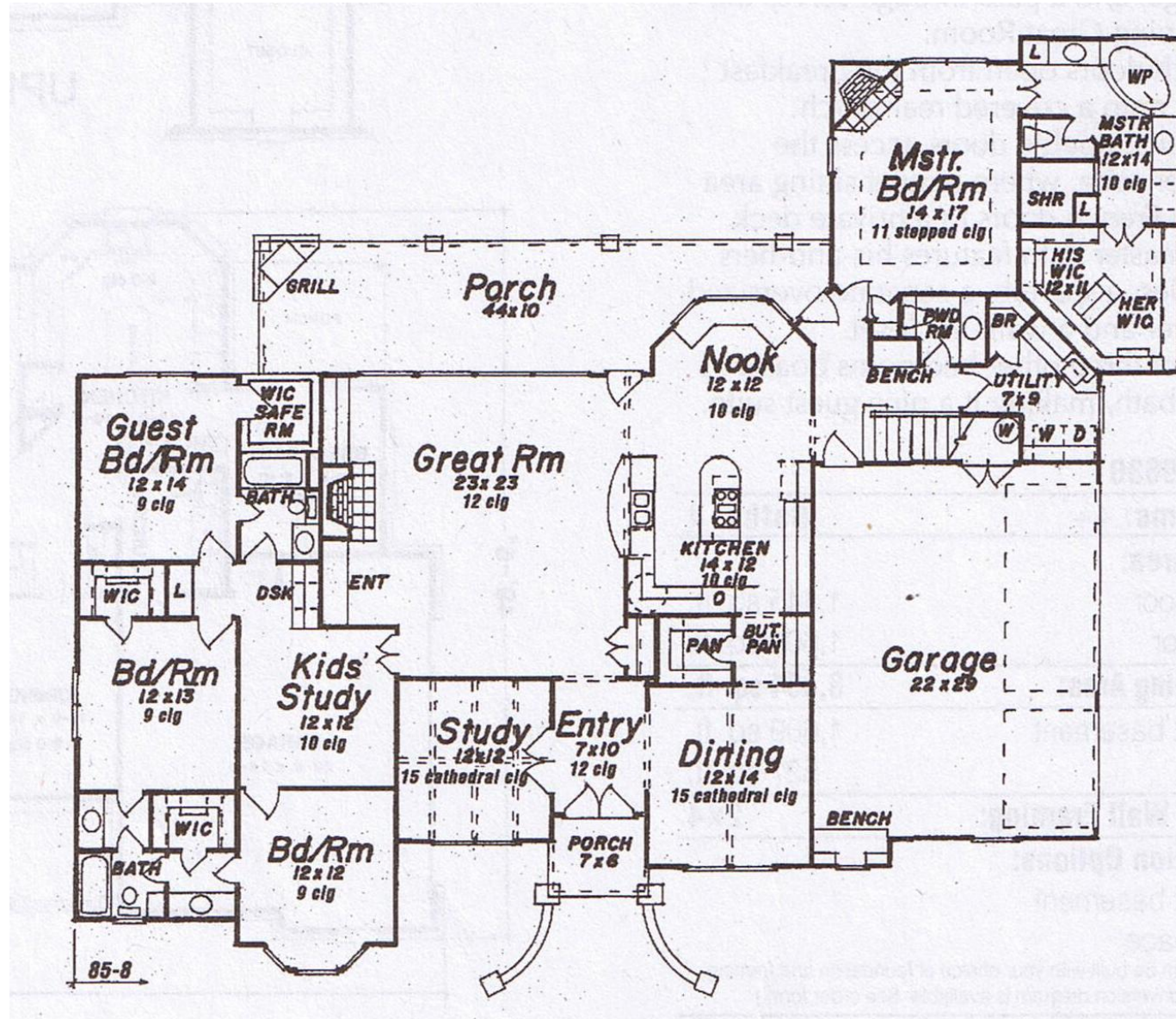
- 1) Bedroom
- 2) Kitchen
- 3) Living room
- 4) Dining room
- 5) Family room





# Building Codes

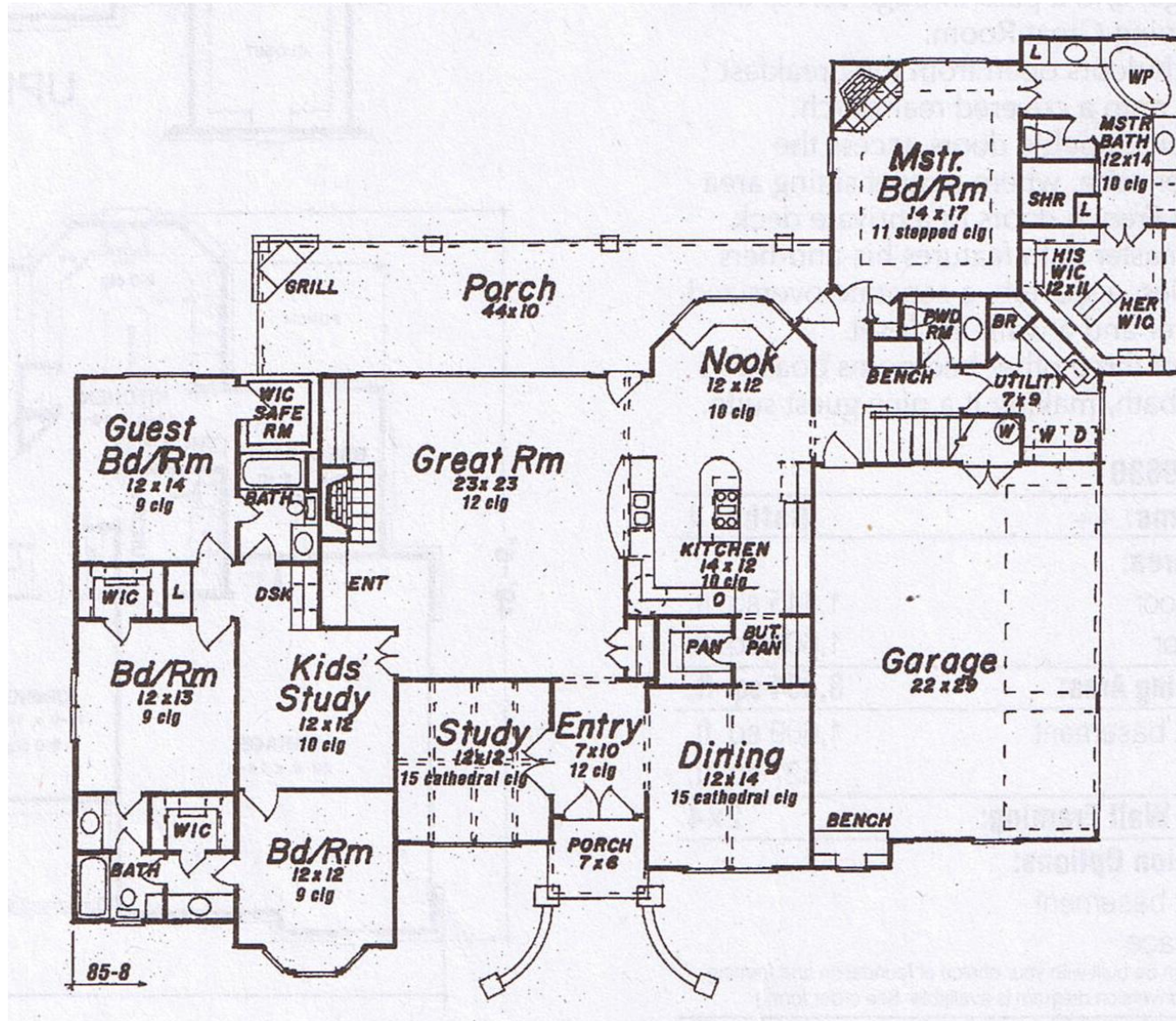
Every dwelling unit is required to have at least one room with a minimum area of 150 square feet. All other habitable rooms must have a minimum area of 70 square feet. The minimum wall to wall distance in a habitable room is 7 feet.





# Building Codes

\*The minimum ceiling height for habitable rooms, hallways, corridors, bathrooms, toilet rooms, laundry rooms and basements is 7'-0". Most homes are built with a ceiling height of 8 feet.





# Building Codes

Beams and girders spaced not less than 4 feet on center may project not more than 6 inches below the required ceiling height.





# Building Codes

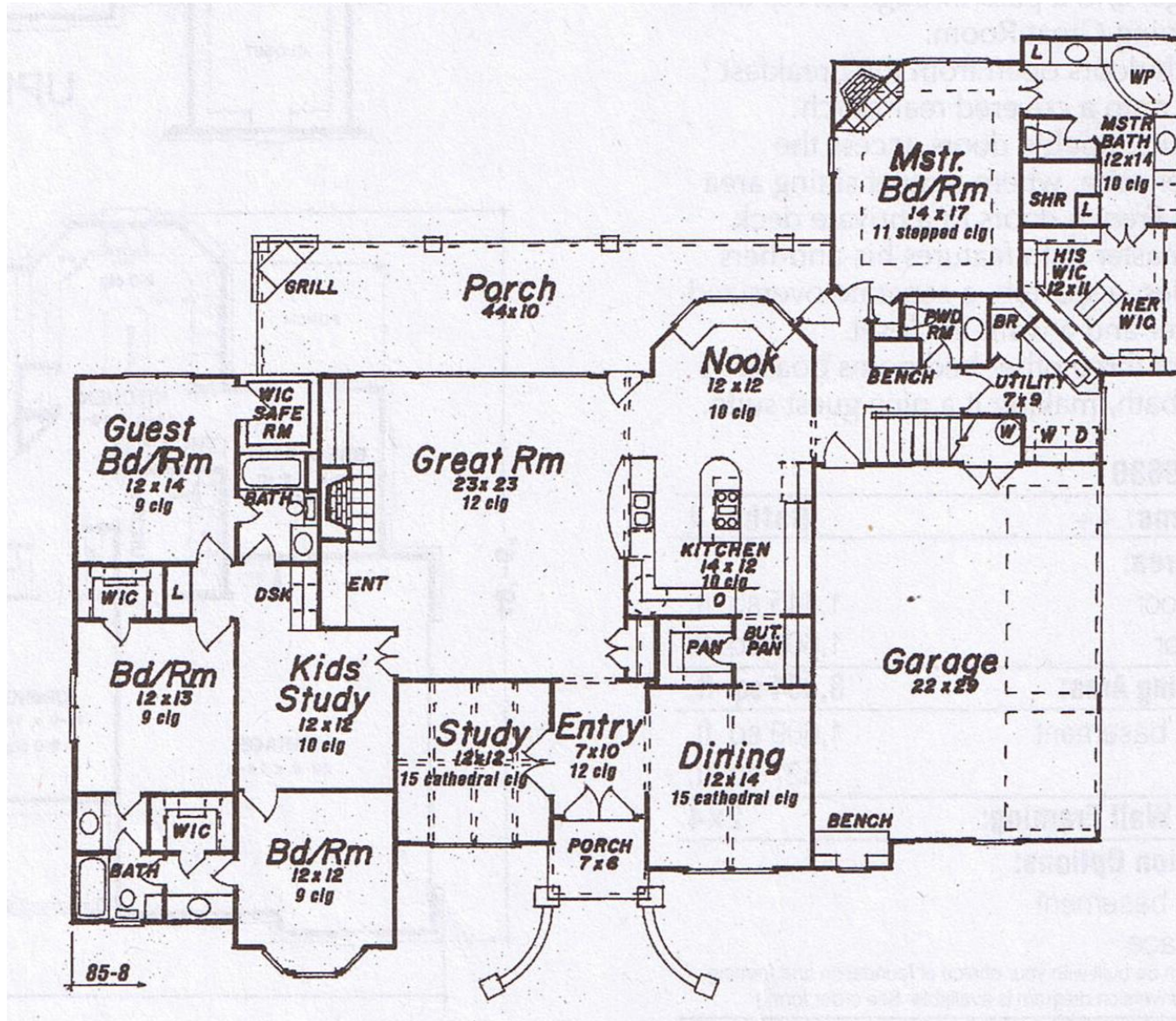
**If the ceiling in a habitable room is sloped, the ceiling height requirements must be maintained in at least half of the room bounded by walls of at least 5 feet in height.**





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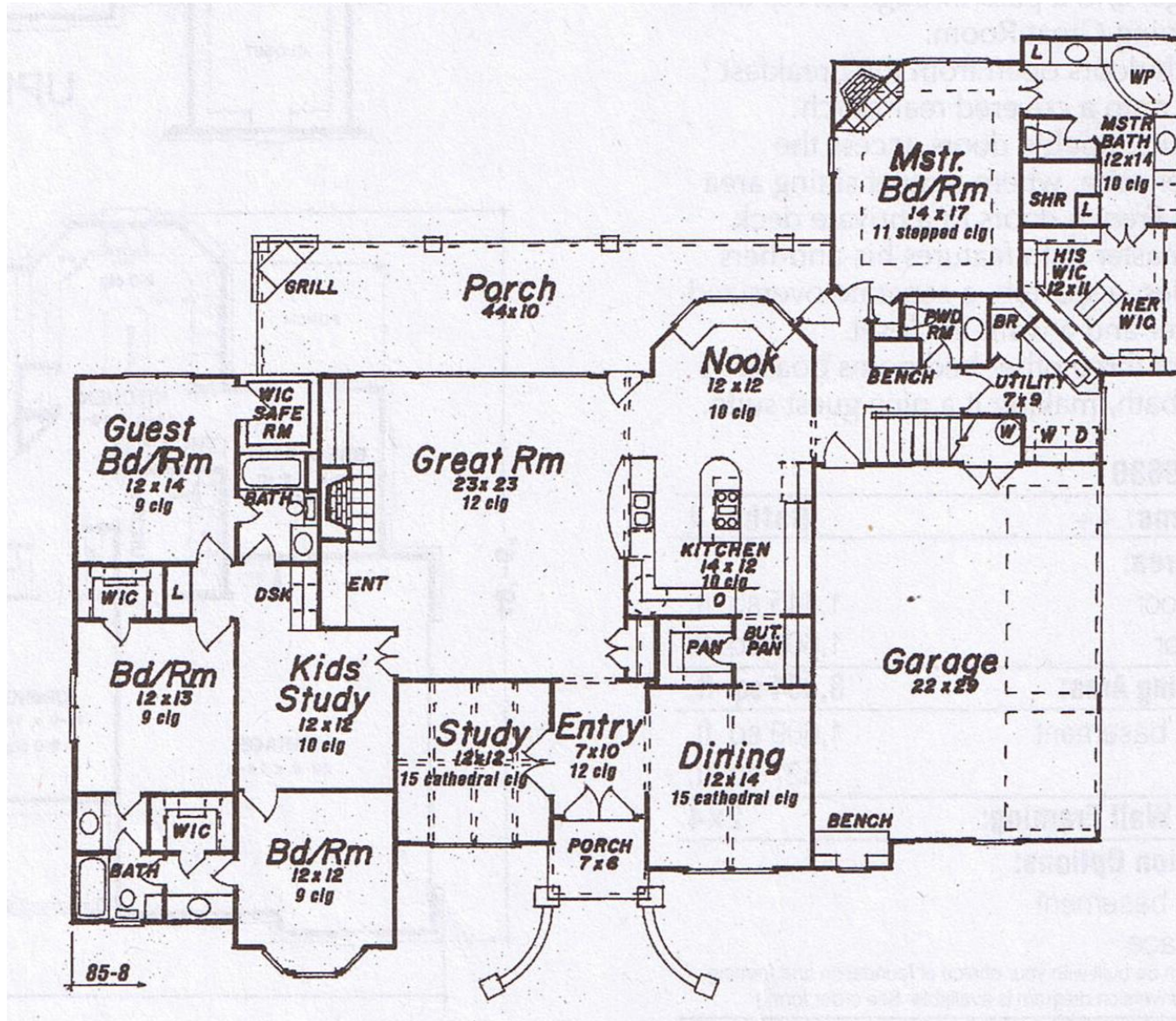
The IRC states that the minimum glazed window area for bringing light into a habitable room is 8 percent of the floor area of the room.





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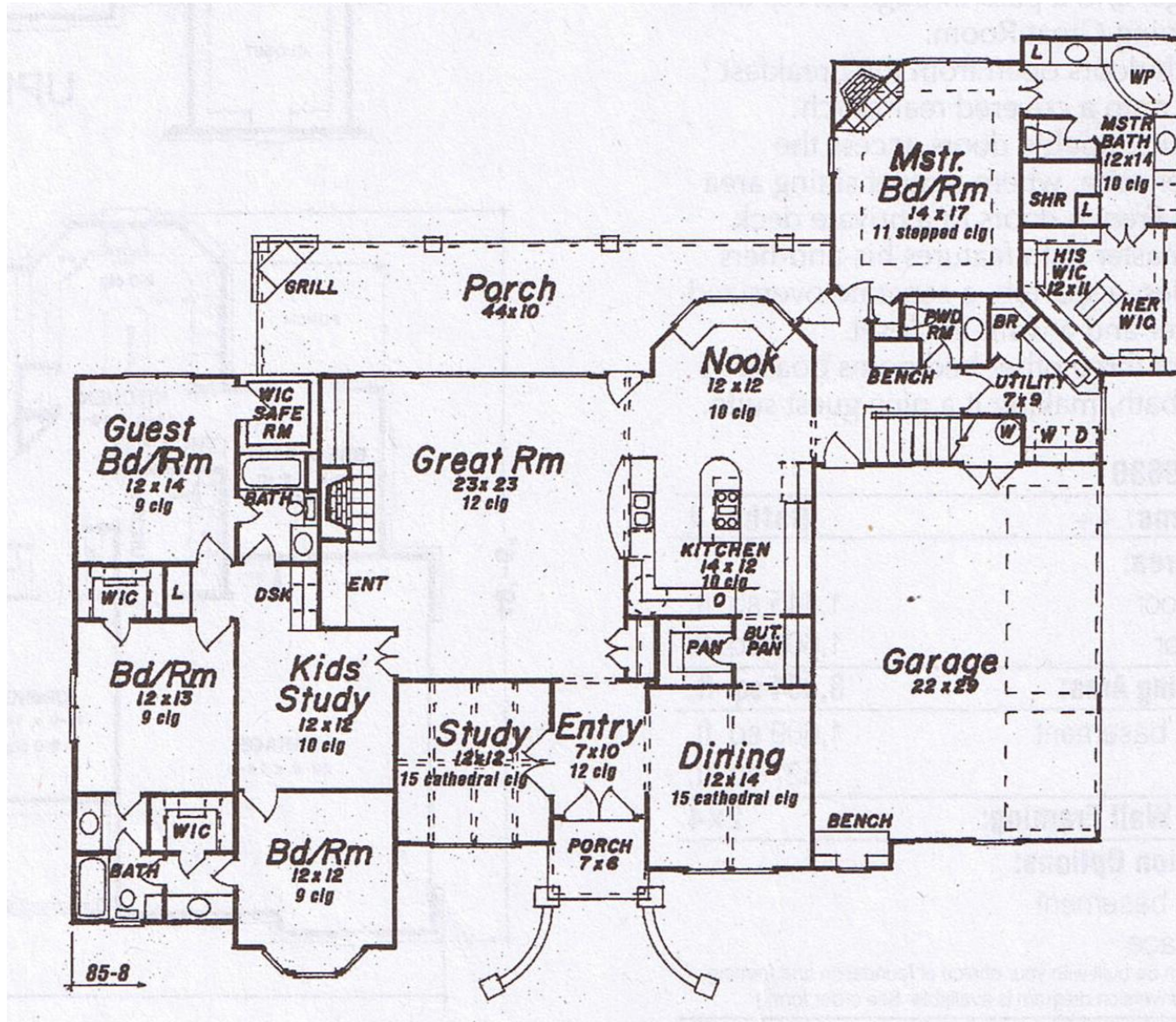
The minimum window opening area for ventilating habitable rooms is one half of the glazing requirement.





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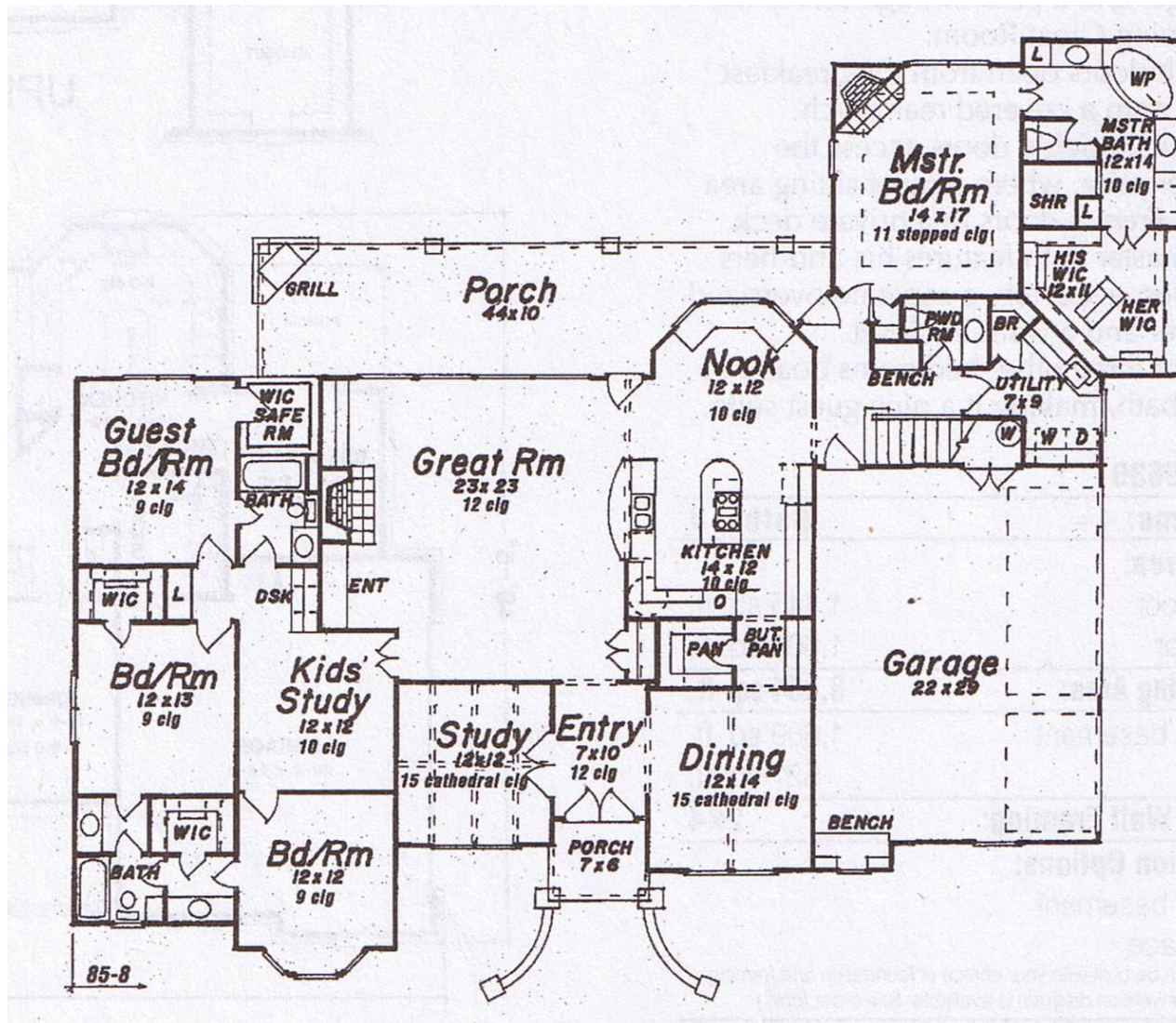
According to the IRC, mechanical ventilation and lighting equipment can be used in place of openable windows in habitable room (except bedrooms) when they meet the footcandle and air change requirements specified in the code.





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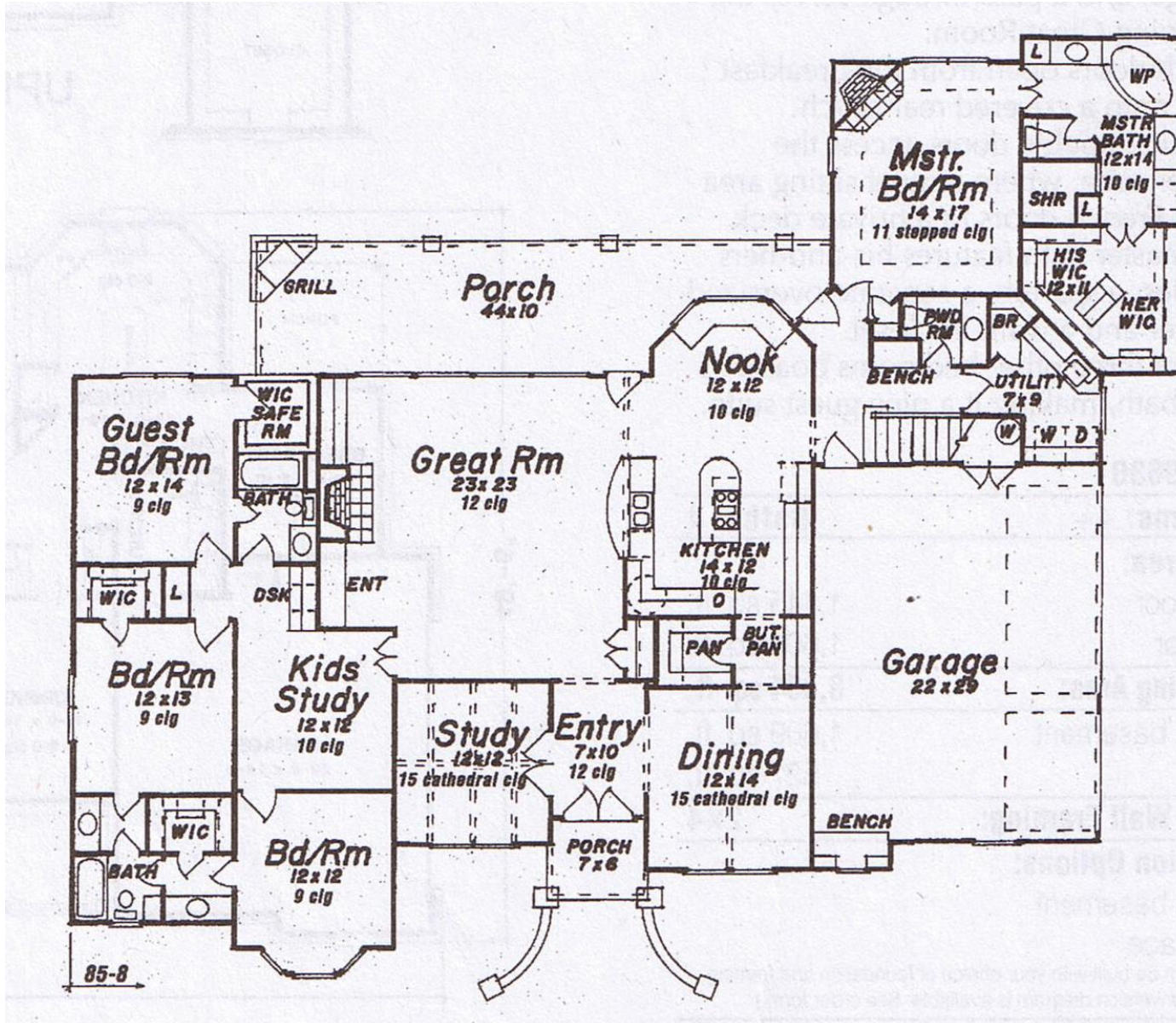
For the purpose of determining the light or ventilation requirements in rooms, any room may be considered as a portion of an adjoining room when half of the area of the common wall is open and unobstructed and provides an opening of not less than one tenth of the floor area of the interior room or 25 square feet whichever is greater.





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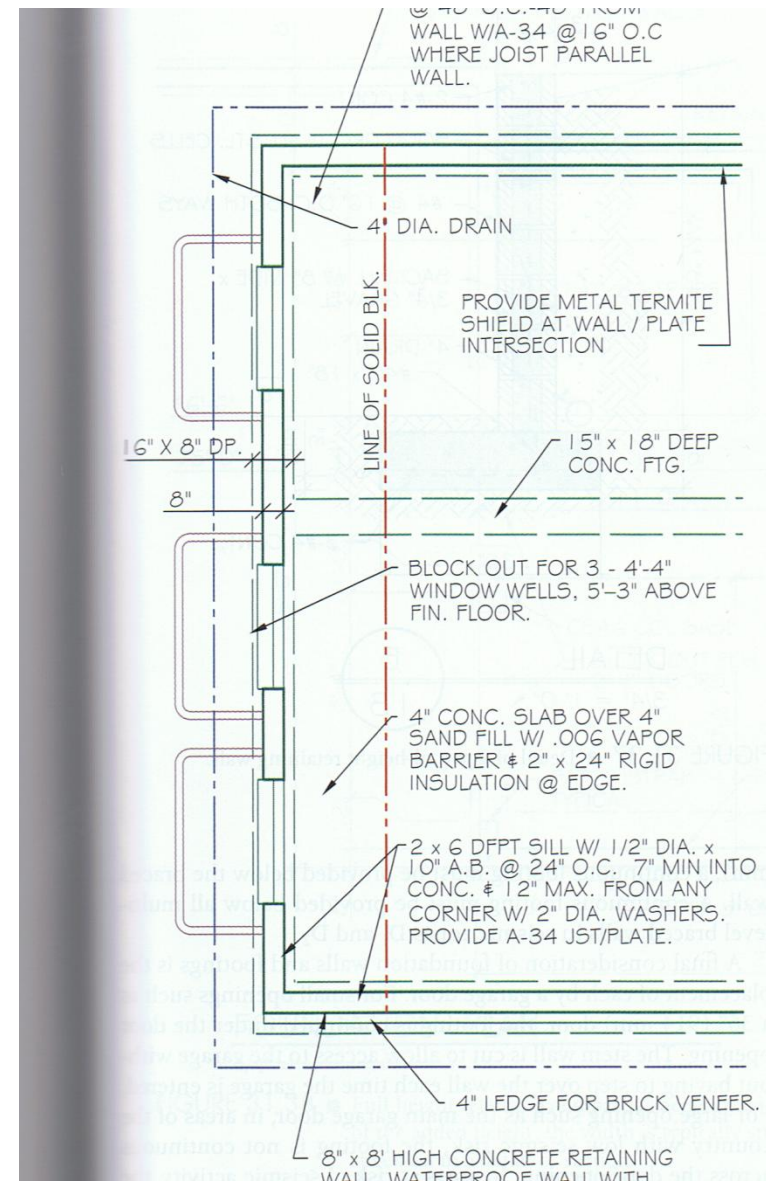
The kitchen is not required to meet the habitable room lighting and ventilation requirements.





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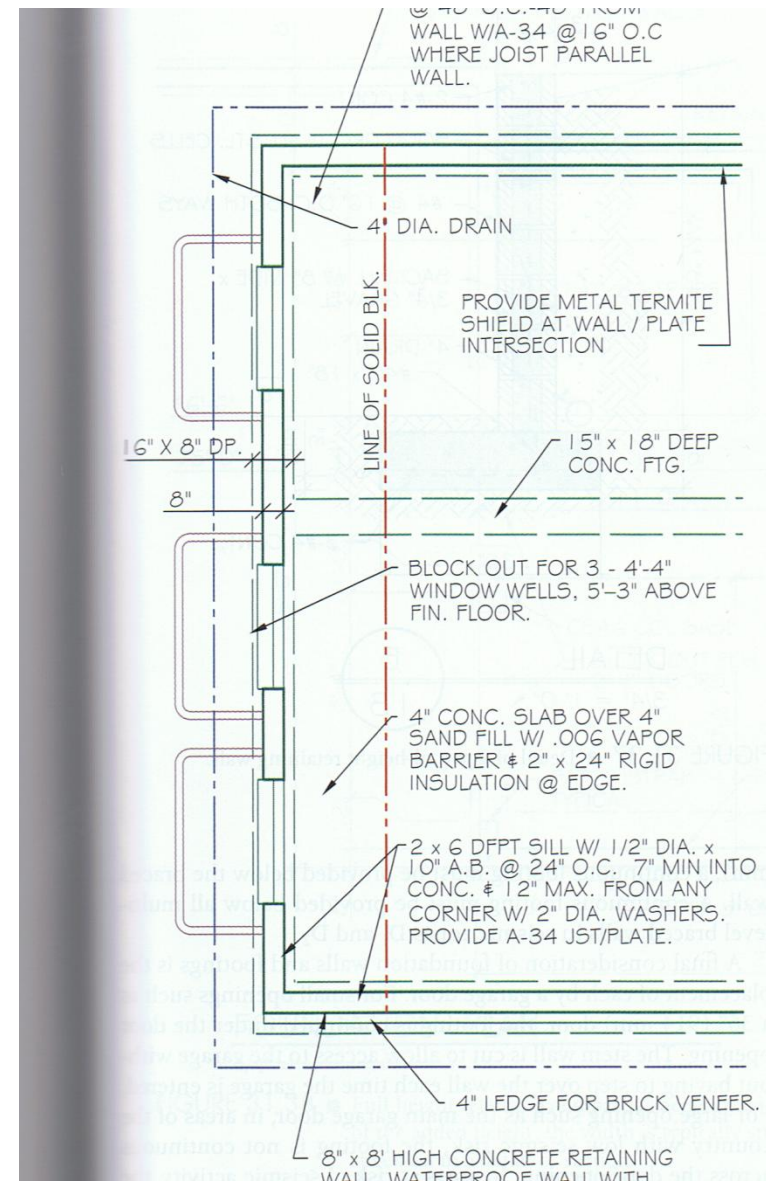
Habitable basements and all sleeping rooms must have at least one operable door or window that opens to the outside. The egress opening must provide a minimum open area of 5.7 square feet. This opening must be a minimum of 20 inches wide and 24 inches high. If this emergency escape route is a window, its finished sill must be within 44 inches of the floor.





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The code further states that if the escape or rescue window finished sill height is below the adjacent ground level (as it would normally be in a basement) it shall have a window well (areaway). The window well or areaway must have a minimum net clear opening of 9 square feet, With a minimum horizontal dimension of 3 feet.

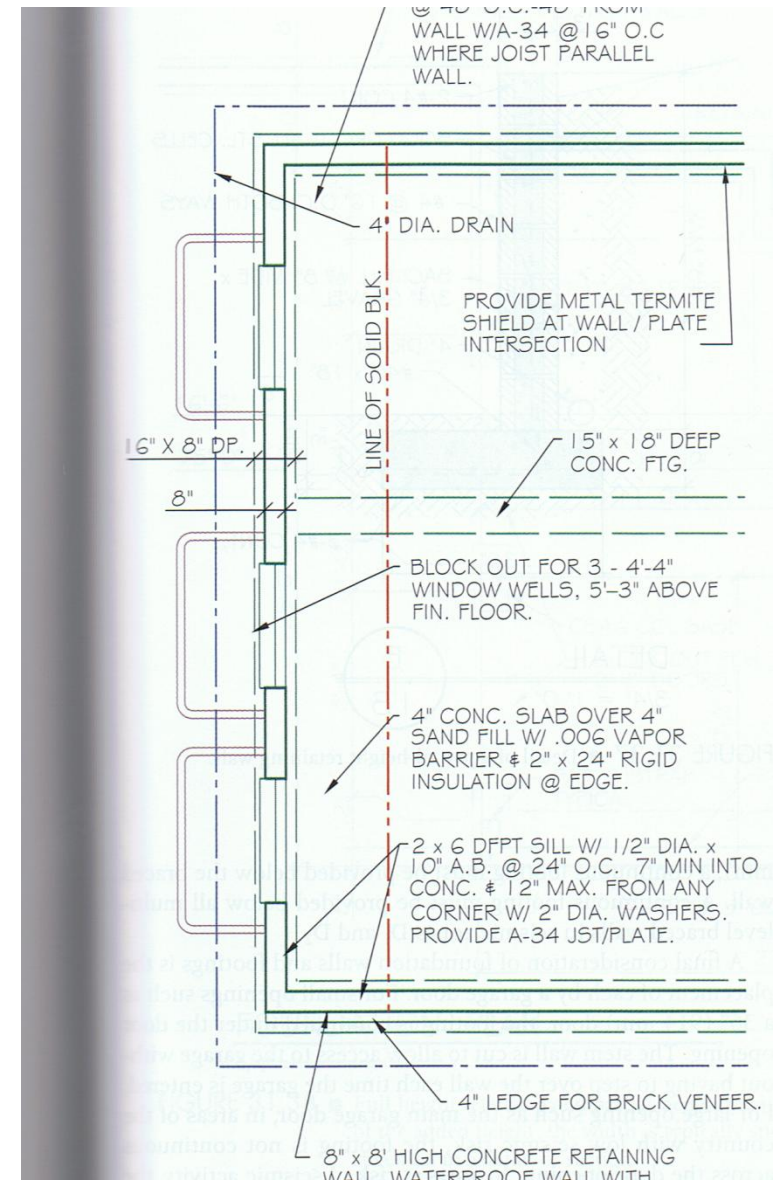




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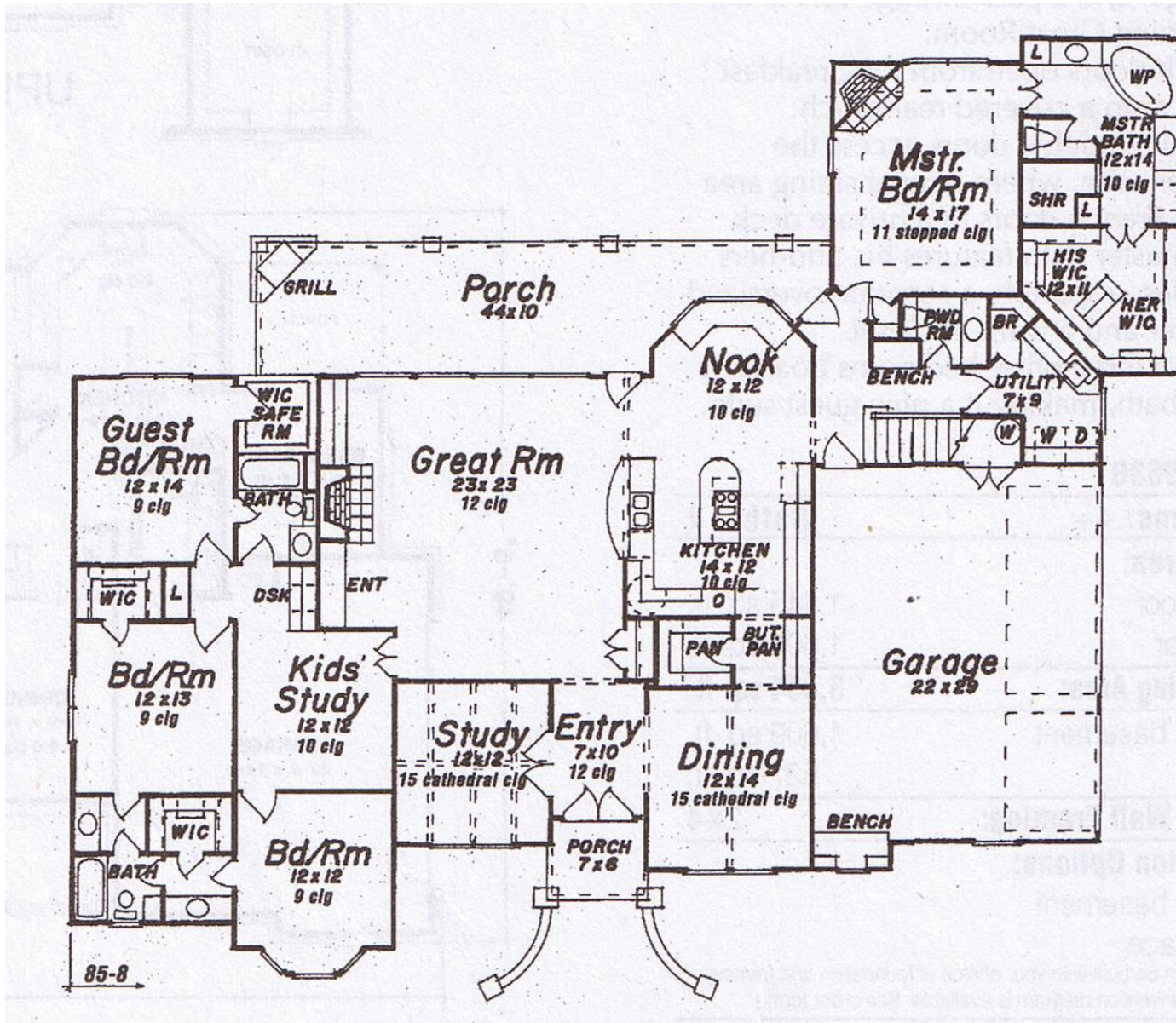
If the window well has a vertical depth of more than 44 inches it shall be provided with an approved permanently affixed ladder. This ladder cannot encroach into the 9 foot minimum area more than 6 inches.

The minimum inside width dimension of the areaway ladder cannot be less than 12 inches and the rungs must be a minimum of 3 inches from the wall of the areaway. The vertical spacing of the rungs should be no more than 18 inches.



# Building Codes

The code states that each kitchen should be equipped with a kitchen sink. Each residence must have a bathroom which has at least a water closet, a sink, and a tub or shower.





# Building Codes

Smoke detectors must be located in each sleeping room as well as a point centrally located in the corridor providing access to the bedroom.



# Building Codes

The code requires the smoke detector to be connected to the normal electrical wiring as well as having a battery-powered backup system.





# Building Codes

The code states that, when the dwelling unit has more than one story and in dwellings with basements, a detector shall be installed on each story and in the basement.



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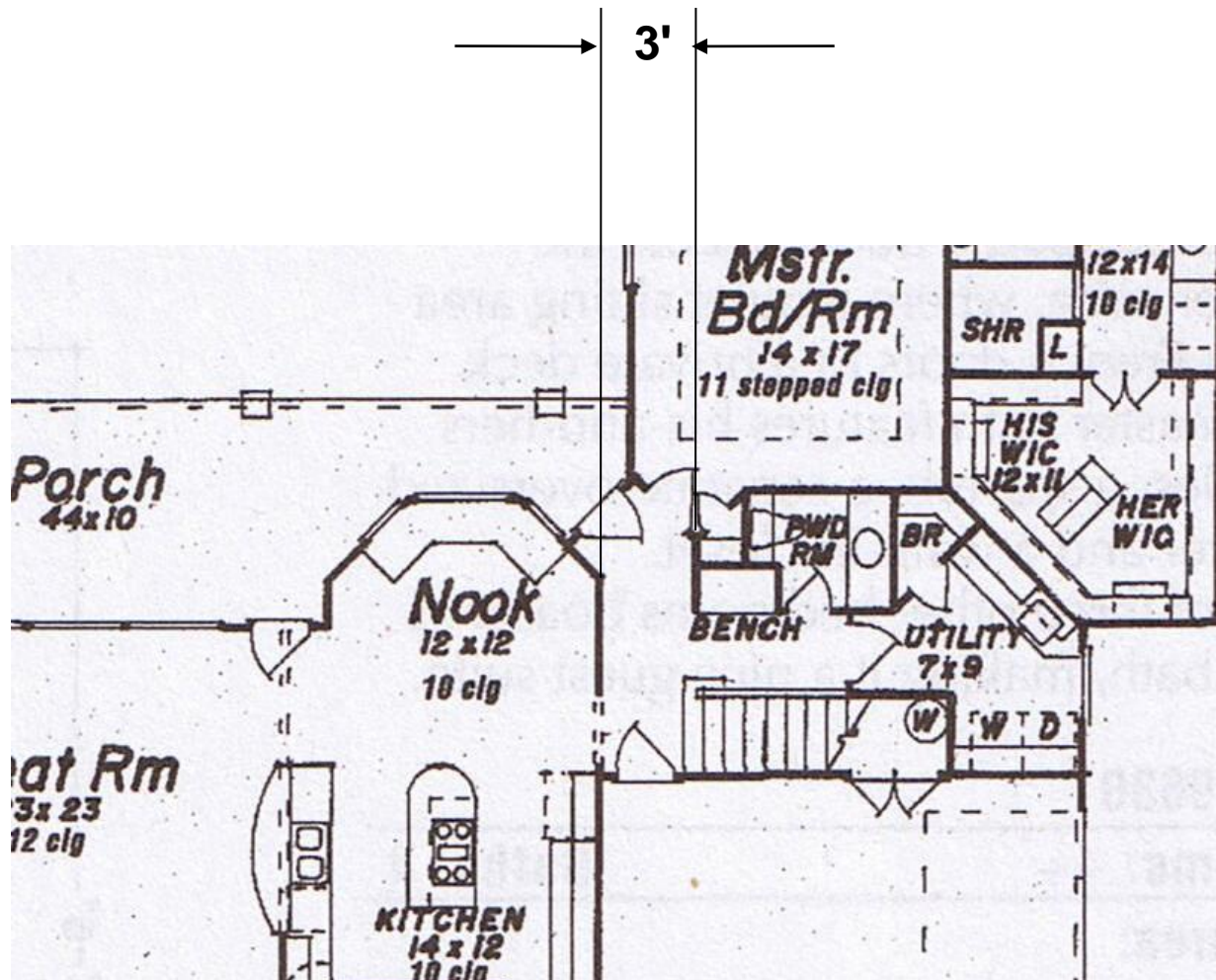
The smoke detectors must be interconnected in such a way that when one alarm is activated they all sound.





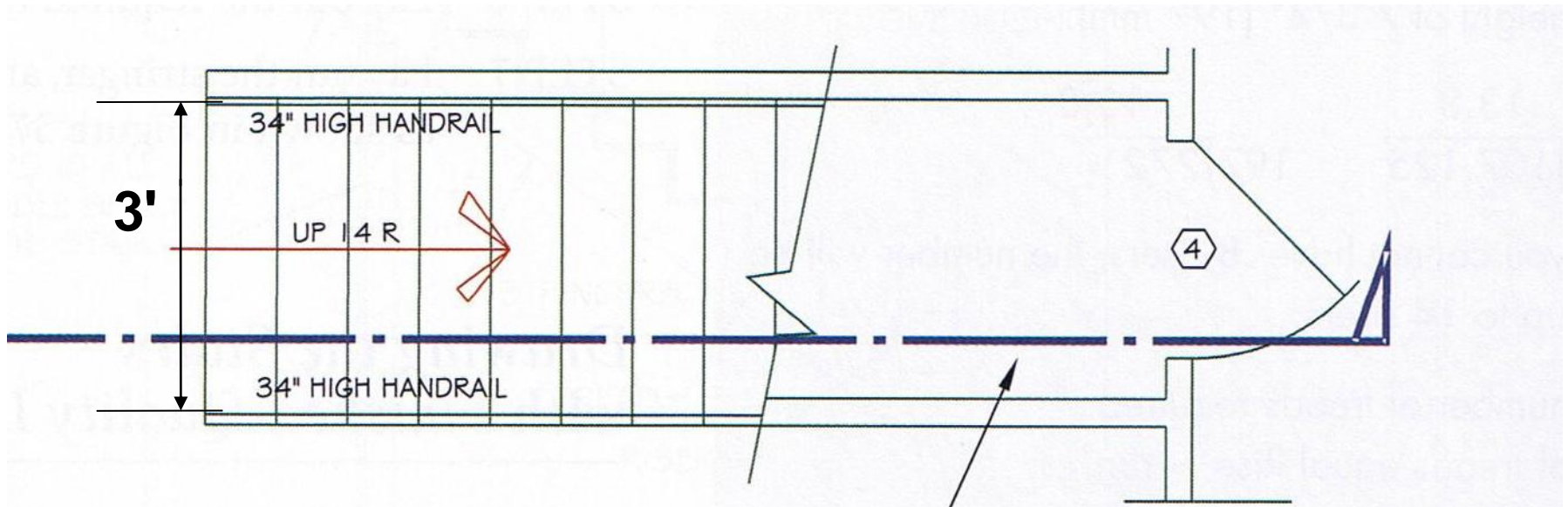
# Building Codes

The minimum hallway width is 36 inches (3').



# Building Codes

The minimum stairwell width is 36 inches (3').

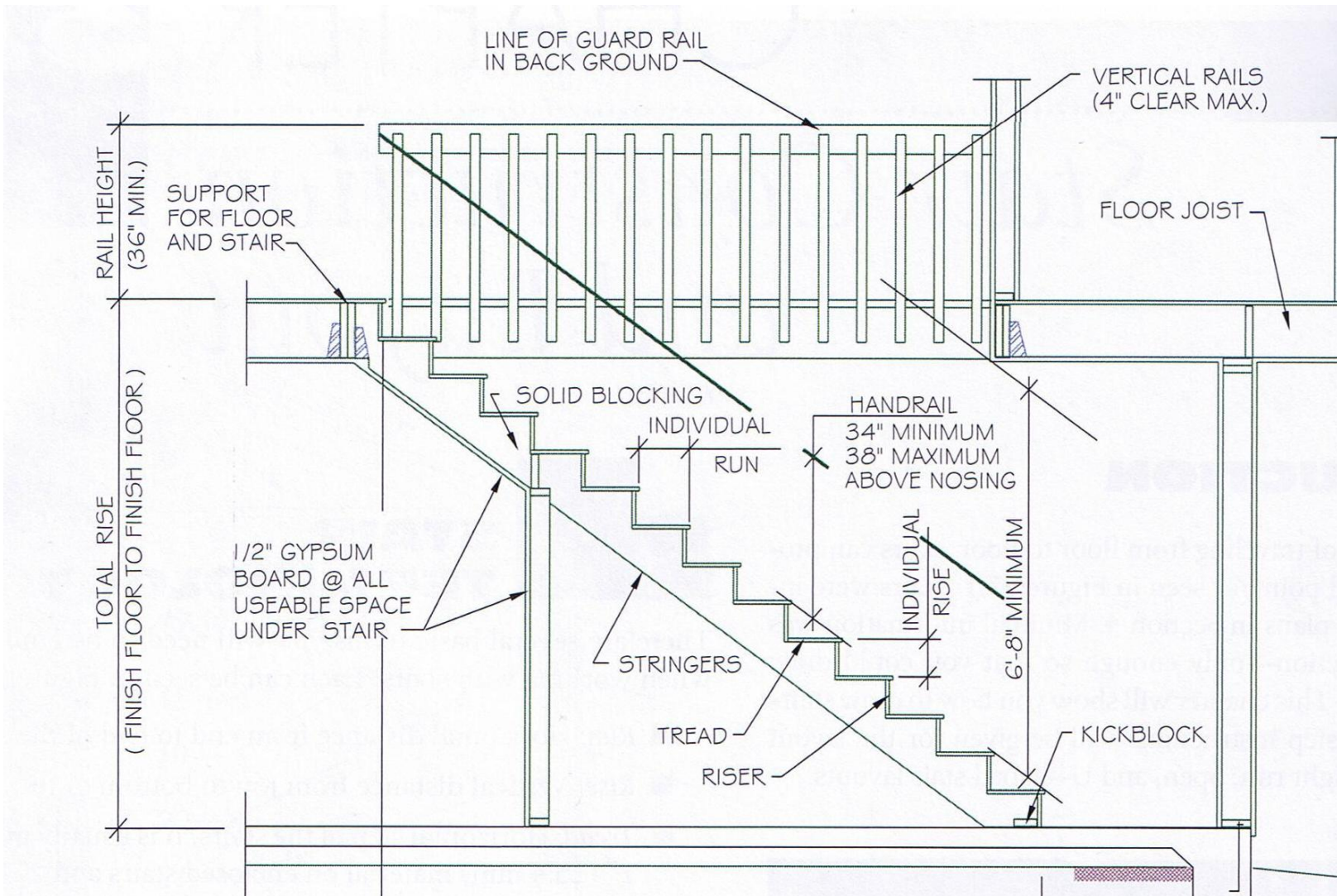




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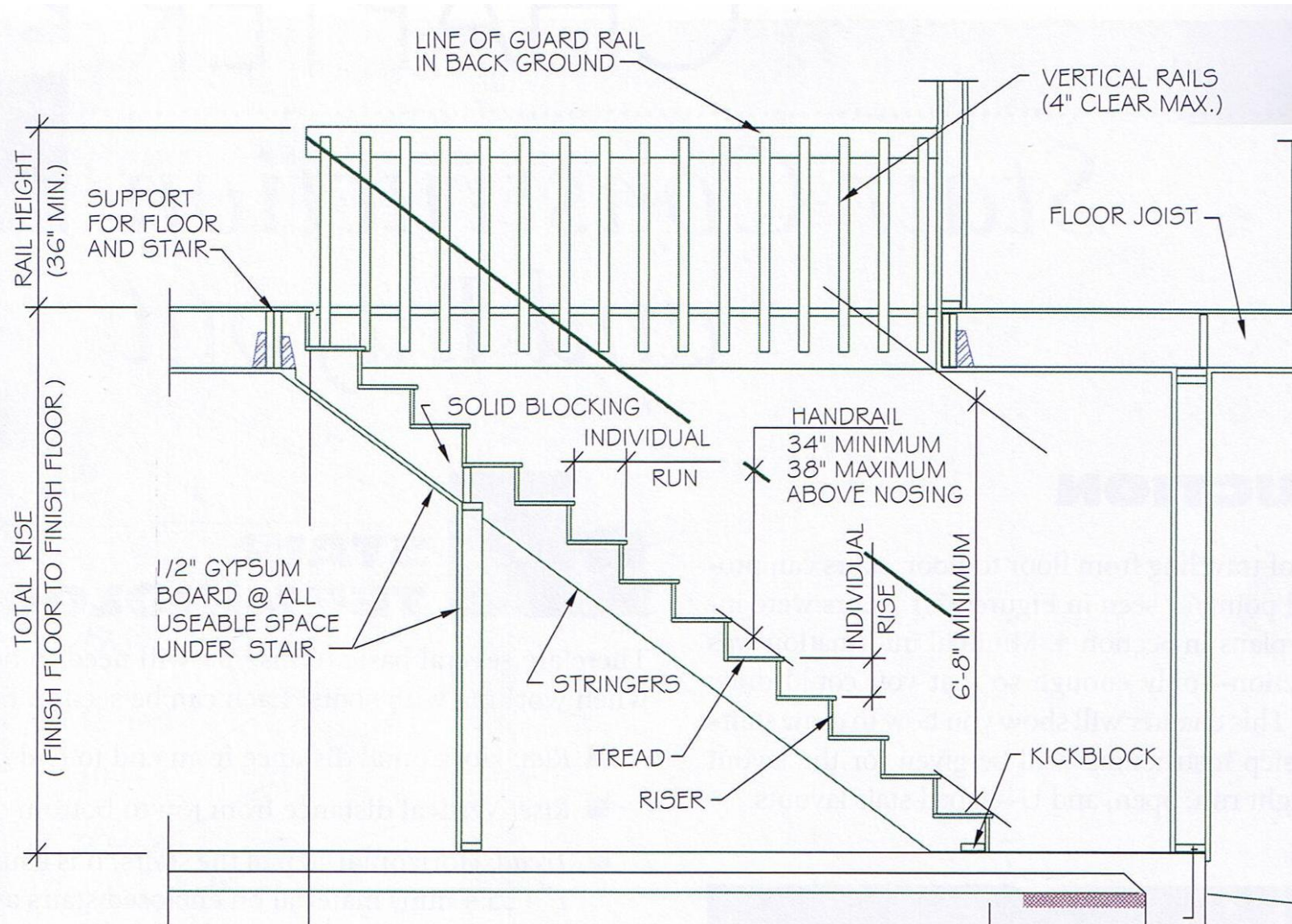
Common stair tread lengths should be between 10 inches and 10 ½ inches with a rise of about 7 ½ inches.

According to the IRC the minimum tread length is 10 inches and the maximum riser height is 7 ¾ inches.



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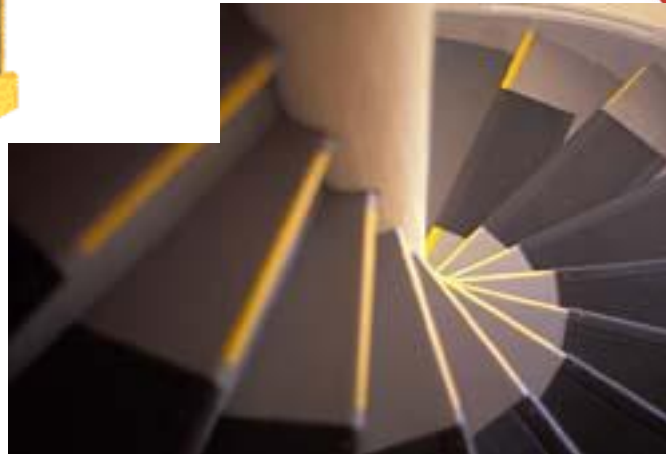
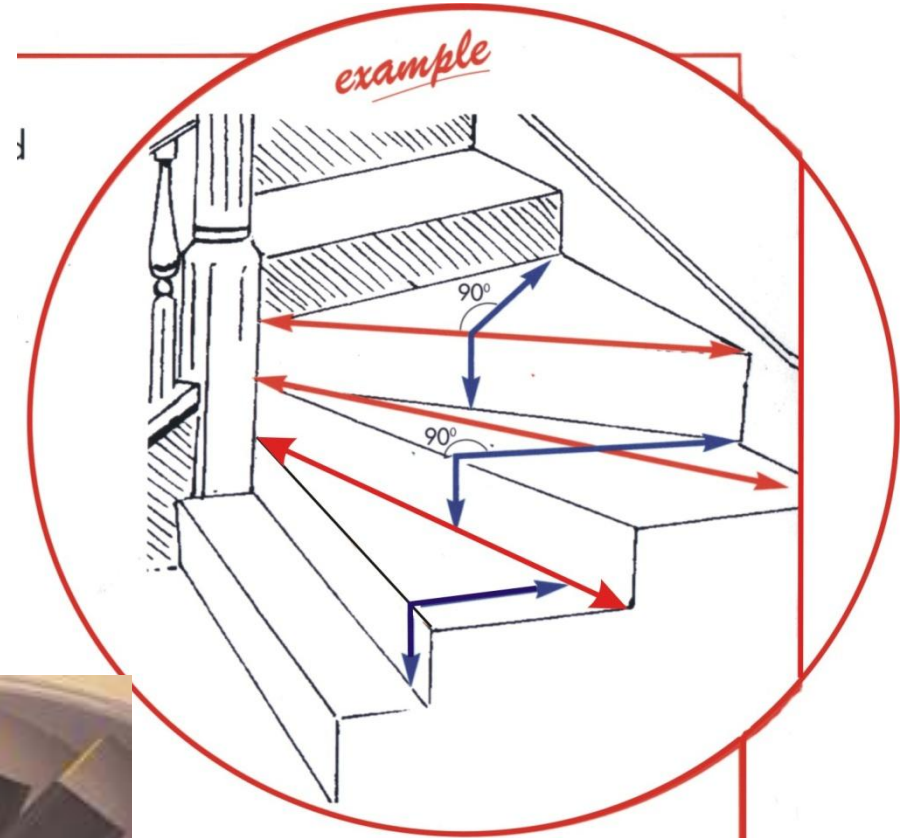
If there is any variation in riser height or in tread run on a flight of stairs, the difference between the largest and smallest cannot exceed  $\frac{3}{8}$  inch.





# Building Codes

Winding stair treads taper toward the pivot point as the stairway makes a change in direction. The minimum stair tread width at a point which is no more than 12 inches from the side of the tread is 10 inches. Inside that 12 inch dimension the minimum tread width allowed is 6 inches.



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**The code provides a variation on minimum tread and maximum riser dimensions for spiral stairs.**

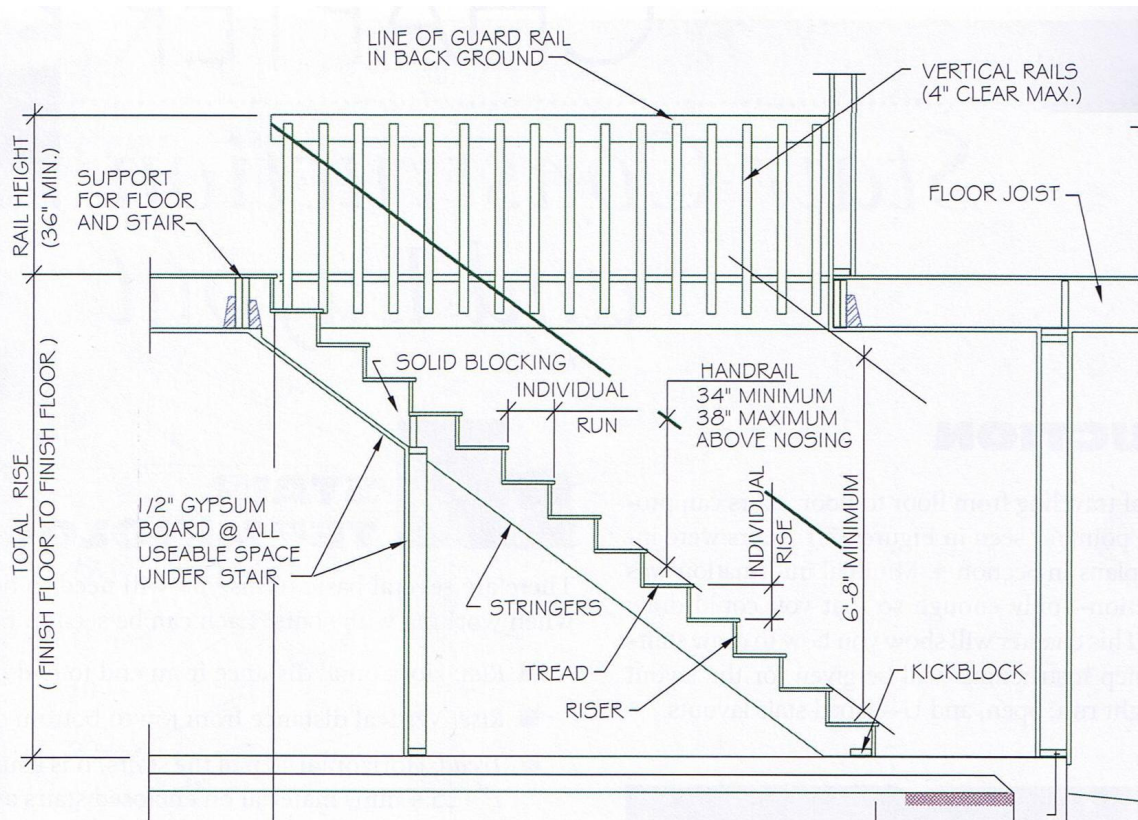
**On a spiral stairway the rise shall not exceed 9 ½ inches and the run must be at least 7 ½ inches at a point 12 inches from where the tread is narrowest. The stairs, in this case, must provide a clear walking width of 26 inches measured from the outer edge of the support column to the inner edge of the handrail.**





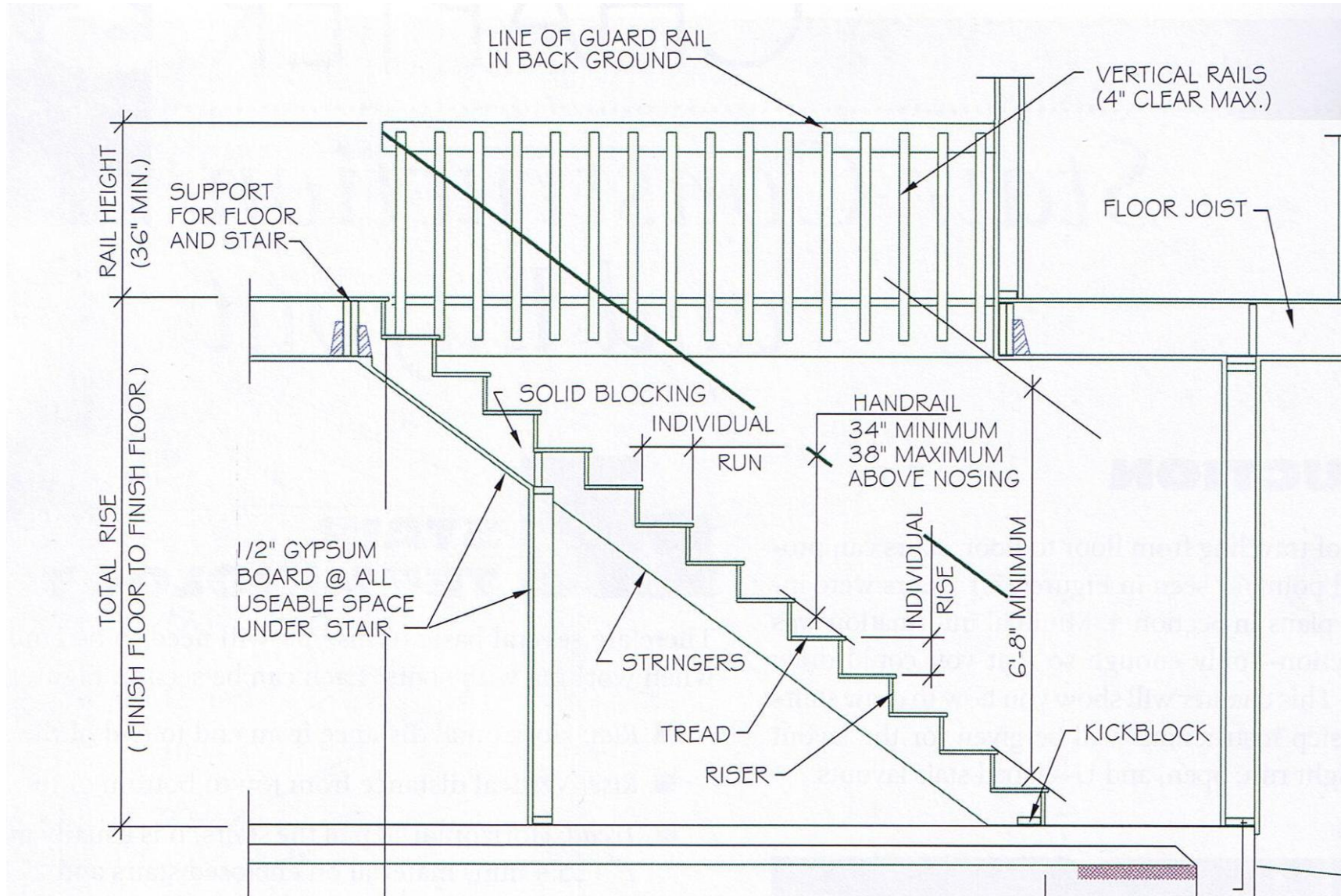
# Building Codes

**\*The minimum headroom for a flight of stairs is normally 6'-8". The exception to this is in the case of spiral stairs where the minimum headroom is 6'-6".**



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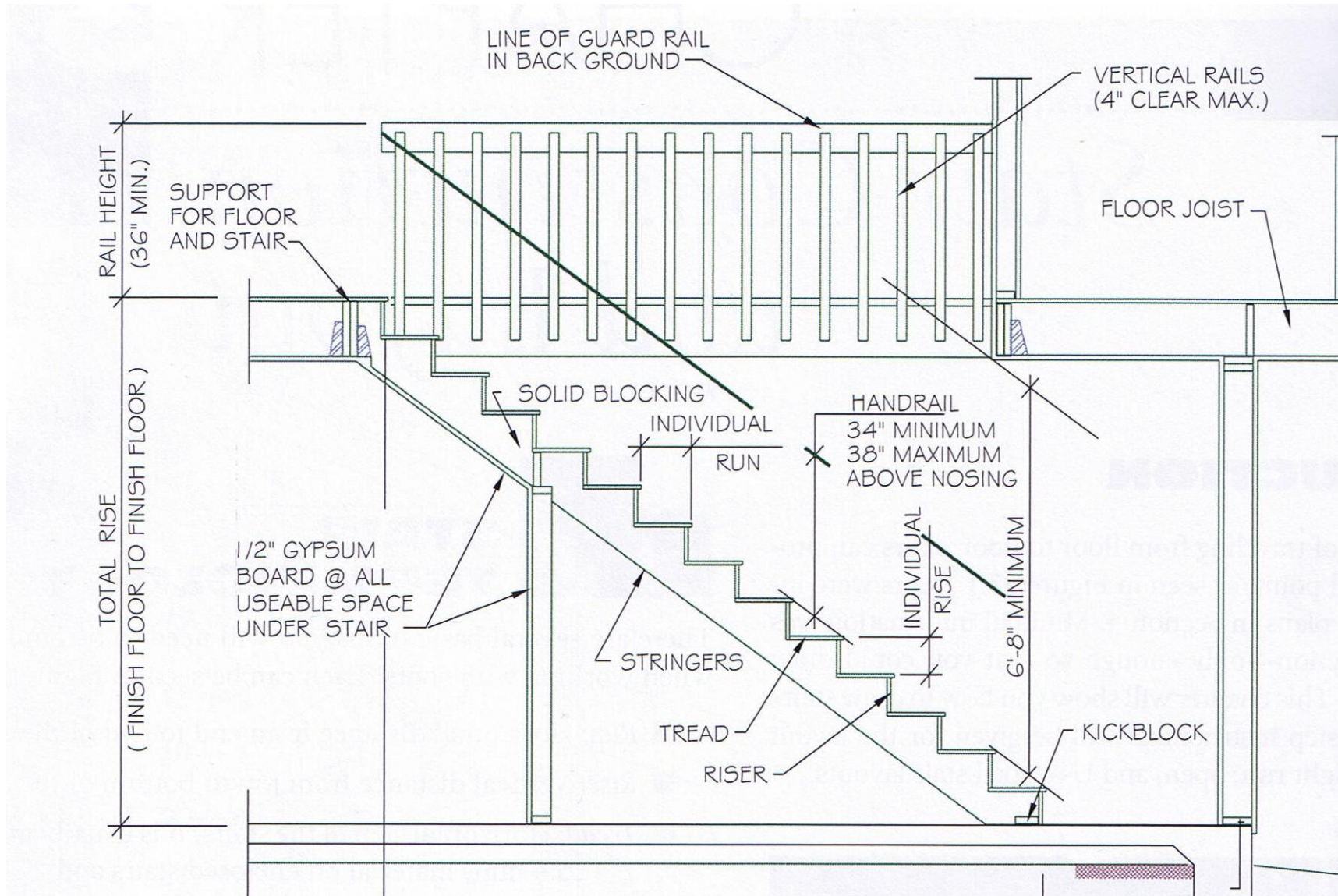
All stairways with 3 or more risers require at least one smooth handrail that extends the entire length of the stairs.





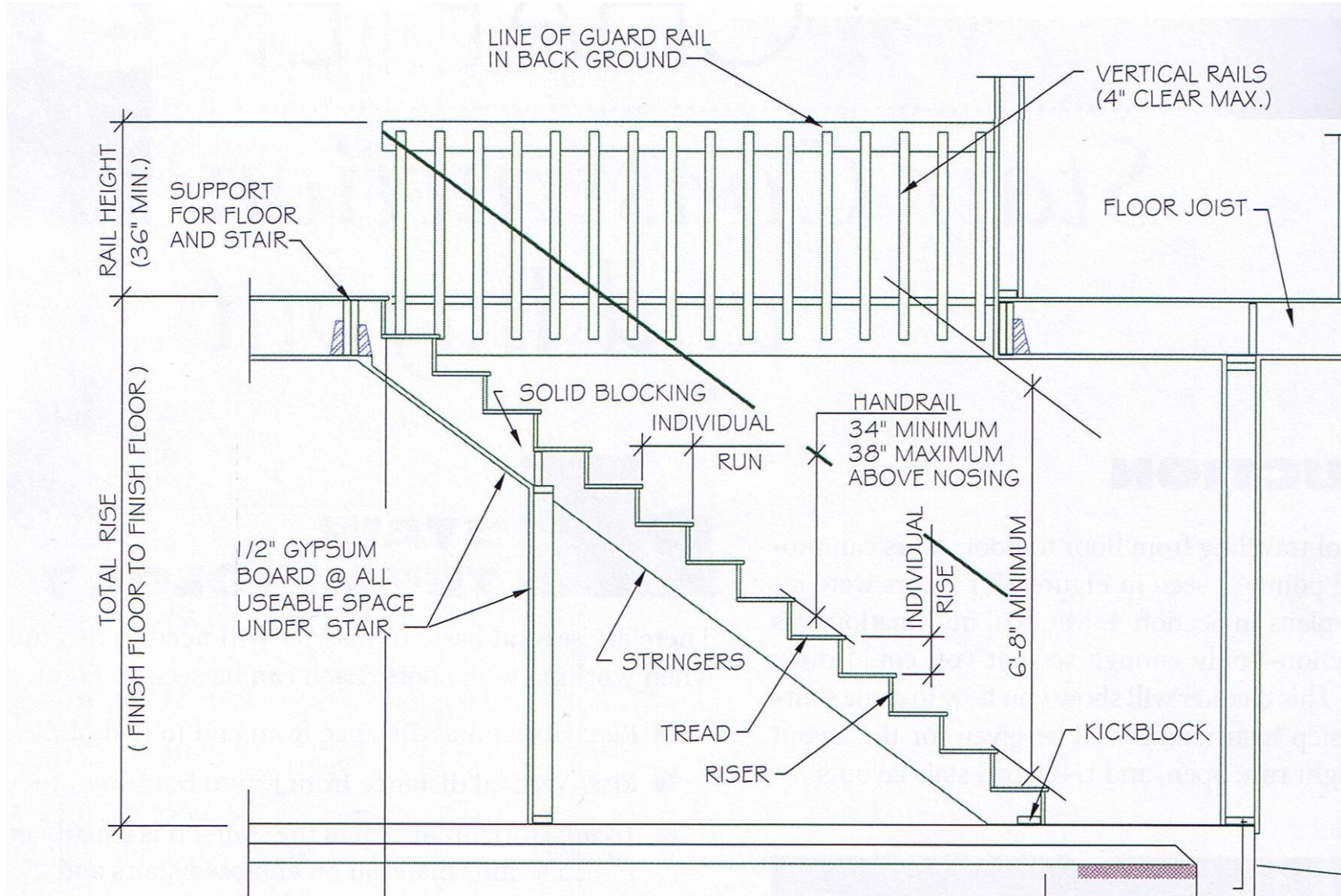
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The code requires the top of the handrail to be between 34 and 38 inches above the nose of the tread.



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The guardrail must be provided at any change in floor elevation that exceeds 30 inches.





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The railings must be constructed so that a 4 inch diameter sphere cannot pass through any opening in the rail.

