

The City of **Columbus**

COMMUNITY DEVELOPMENT • BUILDING DEPARTMENT

Director (402) 562-4239

Building/plumbing Inspectors (402) 562-4264

Email: CommDevPermits@Columbusne.us

(402) 562-4258

Feb 2021

“RESIDENTIAL GUIDE”

This guide is for reference only, for specific requirements
see the **2018** International Residential Code.

**NOTE: A FINAL INSPECTION IS REQUIRED BEFORE A NEW HOUSE MAY
BE OCCUPIED!**

RESIDENTIAL GUIDE

1. **Setbacks (R1 & R2)**

Single and Two Family Residence: (Includes attached garages & decks.)

Front Yard Setback **20 feet** from property line – both street and avenue
Side Yard Setback **7 feet** from property line
Rear Yard Setback **25 feet** from property lot line

Lot Coverage of building structures **not to exceed 40%** of the lot for R1 and R2.

(See “the land Development Ordinance for the city of Columbus” for more details)

2. **Footings and Foundations**

TABLE R403.1
MINIMUM WIDTH OF CONCRETE OR MASONRY FOOTINGS
(inches)^a

	LOAD-BEARING VALUE OF SOIL (psf.)			
	1,500	2,000	3,000	≥ 4,000
Conventional light-frame construction				
1-story	12	12	12	12
2-story	15	12	12	12
3-story	23	17	12	12
4-inch brick veneer over light frame or 8-inch hollow concrete masonry				
1-story	12	12	12	12
2-story	21	16	12	12
3-story	32	24	16	12
8-inch solid or fully grouted masonry				
1-story	16	12	12	12
2-story	29	21	14	12
	42	32	21	16
For SI: 1 inch = 25.4 mm, 1 pound per square foot = 0.0479 kN/m ² .				

- a. Where minimum footing width is 12 inches, a single width of solid or fully grouted 12-inch nominal concrete masonry units is permitted to be used.

If you are using 8" block or an 8" poured concrete foundation, an 8" thick by 16" wide footing is recommended. The foundation walls are required to extend at least 6" above finished grade requiring 36" below grade with 6" above grade. Block basement walls are required to be water proofed with back plaster and tar. Poured concrete basements may be water proofed with tar only. For crawl spaces tar only is approved. R406

3. **Drain Tile**

Basements are required to be drain tiled unless exempted by the Building Inspector. (Check with the Inspector if you have any questions.) Drain tile must be installed around perimeter and center of basement if over 900 sq. ft. Drain tile must be covered with an approved filter membrane material. Window wells must be connected to drain tile system. R405

4. **Sill Plates**

All sill plates in direct contact with concrete are required to be pressure treated or redwood.

5. **Anchor Bolts**

Foundation plates shall be bolted to the foundation with ½" by 10" anchor bolts. Bolts shall be embedded at least 7" into the concrete and spaced not more than 6' apart. Bolts need to be located within 12" of each end piece with a minimum of 2 bolts per piece. R403.1.6

6. **Foundation Ventilation and Under Floor Clearance**

Under-floor areas are required to be ventilated at a ratio of 1 square foot for each 150 square feet of floor area. Vents should be located within 3' of the corners. The required area should be equally distributed along the length of at least two opposite sides. The minimum clearance between the bottom of the floor joists and the ground below is 18". The minimum clearance below the girder is 12". Under floor access shall be provided by an 18" x 24" opening. R408.2

7. **Crawl Space Insulation**

Crawl spaces are required to be insulated in accordance with the State Energy code. Check with the Building Inspector, as some types of foam insulation are required to be covered.

8. **Exits**

At least one door shall be not less than 36" wide and 6' 8" in height. The door shall be side hinged. R311.2

Egress Windows Required

Basements in dwelling units and all bedrooms must have emergency egress windows with a maximum height of 44" measured from floor to opening. Grade floor openings shall have a minimum net clear opening of 5 square feet. A 24" x 30" window opening meets minimum 5.0 sq. ft. open. All egress windows other than at grade (**basements**) **must have a net clear opening of 5.7 square feet**. The minimum clear opening width is 20". The minimum clear opening height is 24". If you have an unfinished basement, you need at least one egress window. A 20" x 24" opening will not work because it does not equal 5.7 square feet. *See attached new window well code. The window must open at a right angle and maintain the required opening. R310.1.1

9. **Window wells**

Window wells with a vertical depth greater than 44 inches shall be equipped with a permanently affixed ladder or steps usable with the window in the fully open position. Ladder or rungs shall have an inside width of at least 12 inches and shall project at least 3 inches from the wall and shall be spaced not more than 18" on center vertically from the full height of the window well. R310.2.1

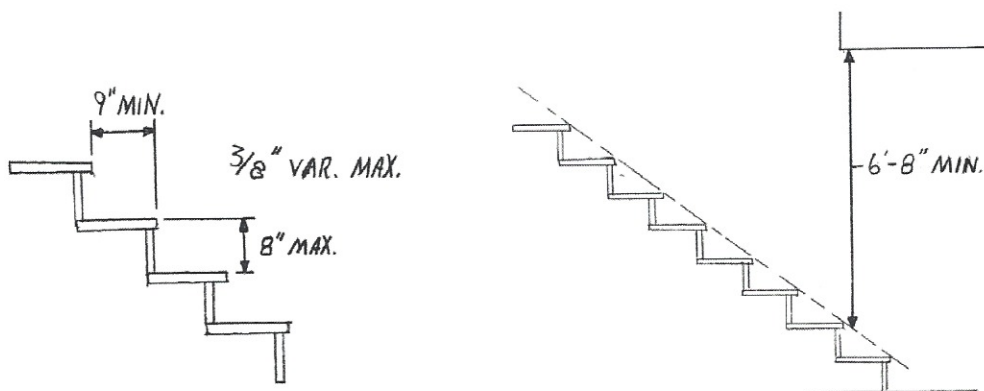
All window wells must be connected to the foundation's drainage system. R310.2.2

10. **Stairs**

The riser height within any flight of stairs shall not exceed the smallest by more than $\frac{3}{8}$ of an inch. The **maximum rise is 8"** and the **minimum run is 9"**. Stair railings shall have intermediate rails or an ornamental pattern so that a **4 $\frac{3}{8}$ " sphere in diameter cannot pass through**. R311.7.5.1 and R311.7.5.2 City amendments, R312.1.3

Headroom

Every required stairway shall have a **headroom clearance of not less than 6' 8"** measured vertically from the sloped line adjoining the nearest tread to the next tread. See illustration below. R311.7.2



11. **Under stair protection.** Enclosed accessible space under stairs shall have walls, under stair surface and any soffits protected on the enclosed side with $\frac{1}{2}$ inch (12.7 mm) gypsum board. R302.7

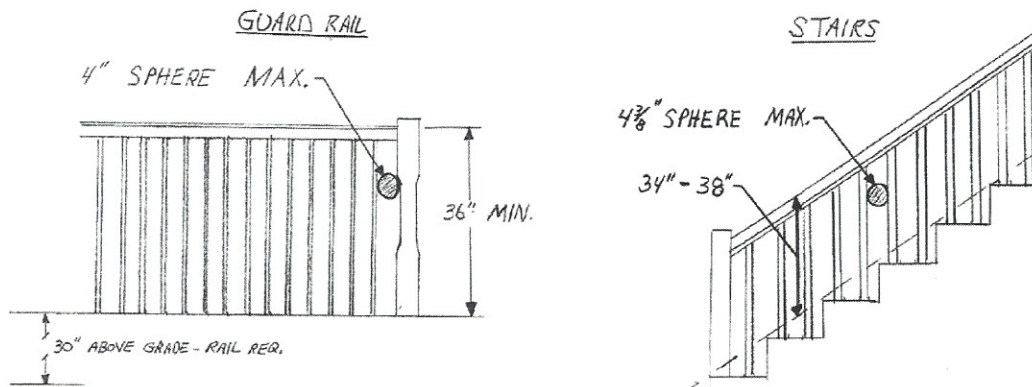
12. **Handrails**

Handrails shall be provided on at least one side of each continuous run of treads or flight with four or more risers. R311.7.2

Stairways shall have at least one handrail. Handrails shall be installed on open sides of stairways. Exception – None required on stairways with 3 or less risers. The top of the handrail shall be placed not less than 34" or more than 38" above the nosing of the treads. They shall be continuous the full length of the stairway. Handrails projecting from a wall shall have a space of not less than 1 $\frac{1}{2}$ " between the handrail and the wall. The handrail shall not be less than 1 $\frac{1}{2}$ " nor more and 2" in cross sectional dimension. The hand grip portion shall have a smooth surface with no sharp corners. Handrail ends shall be returned to the wall at the top and the bottom of the handrail or terminated in newel posts. R311.7.8.2

13. **Guardrails**

All unenclosed floor and roof openings, open and glazed sides of landings and ramps, balconies or porches which are **more than 30" above grade** or the floor below, and roofs used for other than service of the building shall be protected by a guardrail. **Guardrails shall not be less than 36" high**, except on stairways where they may be 34" high but not exceed 38". Open guardrails shall have intermediate rails or an ornamental pattern so that a **4" sphere in diameter cannot pass through**. R312.1.1. R312.1.2



14. **Landings Required**

A minimum 3' x 3' landing is required on each side of an exterior door. May be 7 1/2" lower than the top of the threshold. Landings are also required on interior doors with these exceptions. 1) A door may open at the top step of an interior flight of stairs provided the door does not swing over the top step. 2) A door may open at a landing that is not more than 7 1/2" lower than the top of threshold provided the door does not swing over the landing. R311.3.

15. **Smoke Detectors**

Smoke alarms shall be installed in the following locations:

1. In each sleeping room.
2. Outside each separate sleeping area in the immediate vicinity of the bedroom.
3. In each level of the dwelling.
4. Must be interconnected and hard wired. R314.3

16. **Fire Stops Required**

Fire stopping shall be provided to cut off all concealed draft openings (both vertical and horizontal) and to form an effective fire barrier between stories and between a top story and a roof space. Fire stopping shall be provided in wood-frame construction in the following locations:

1. In concealed spaces of stud walls and partitions including furred spaces at the ceiling floor level.
2. At all interconnections between concealed vertical and horizontal spaces such as soffits, drop ceilings, cove ceilings, etc.
3. In concealed spaces between stair stringers at the top and bottom run.
4. At openings around vents, pipes, ducts, chimneys, and fireplaces at ceiling and floor level with noncombustible materials.

Except as provided in item 4 above, fire stopping shall consist of 2" nominal lumber or 2 thickness of 1" nominal lumber with broken lap joints, or 1 thickness of 22/33 inch plywood, or other approved materials such as drywall and insulation.

17. **Carbon Monoxide Alarms**

In new construction an approved alarm shall be installed outside of each sleeping area in which a fuel fired appliance is installed and in dwelling units that have attached garages. R315.1

18. **Draft stopping Required**

Draft stopping shall be provided in all floor/ceilings under the following circumstances:

In floor/ceiling assemblies, the maximum area permitted without a draft stop is 1,000 square feet. Draft stopping shall run parallel to the framing members. Draft stopping materials shall be not less than ½ gypsum board, ¾ plywood, or other approved materials. R302.12

19. **Light, Ventilation, and Sanitation**

All living rooms, kitchens, and other rooms used for living, dining, or sleeping purposes (habitable rooms) shall be provided with natural light by means of exterior glazed openings with an area of not less than 8% of the floor area of such rooms with a minimum of 10 square feet. R303.1

All Bathrooms

Water closet compartments, laundry rooms, and similar rooms shall be provided with natural ventilation by means of openable exterior openings with an area not less than 1/20th of the floor area of such rooms with a minimum of 1 ½ square feet. R303.3

All Habitable Rooms

All habitable rooms within a dwelling unit shall be provided with natural ventilation by means of openable exterior openings with an area of not less than 1/20th of the floor area of such rooms with a minimum of 5 square feet. R303.1

In lieu of required exterior openings for natural ventilation, a mechanical ventilation system may be provided. Such system shall be capable of providing two air changes per hour in all habitable rooms. One fifth of the air supply shall be taken from the outside. In bathrooms containing a bathtub or shower combination thereof, laundry rooms, and similar rooms, a mechanical ventilation system connected directly to the outside capable of providing five air changes per hour shall be provided. The point of discharge air shall be at least 5' from any air intake opening. Bathrooms which contain a water closet only may be provided with a recirculating fan.

20. **Ceiling Heights**

Habitable space shall have a ceiling height of not less than 7' except as otherwise permitted in this section. Kitchens, halls, bathrooms, and toilet compartments may have a ceiling height of not less than 7'. Where exposed beam members are spaced at less than 48" on center ceiling, height shall be measured at the bottom of the members. Where exposed ceiling beam members are spaced at more than 48" on center, ceiling height shall be measured to the bottom of ceiling provided the bottom members are not less than 6' 8" high. R305.1

If any room has a sloped ceiling, the prescribed ceiling height for the room is required in half of the area. No portion of the room measuring less than 5' from the finished floor to the finished ceiling shall be included in any computation of the minimum area thereof.

If any room has a furred ceiling, the prescribed ceiling height is required in two thirds of the area but in no case may it be less than 7'.

21. **Room Dimensions**

Every dwelling unit shall have at least one room, which shall have not less than 120' of floor area. Other habitable rooms shall have an area of not less than 70 square feet. Habitable rooms other than a kitchen shall be not less than 7' in any dimension. R304.1 R304.2

Each water closet stool shall be located in a space not less than 30" in width, or not less than 21" in front. R307.1

22. **Sanitation**

Sanitation facilities shall be provided. A water closet room shall be separated from food preparation or storage rooms by a tight-fitting door.

Every dwelling shall be provided with a kitchen equipped with a kitchen sink. Every dwelling unit shall be provided with a bathroom consisting of a water closet, lavatory, and either a bathtub or shower. Each sink and bathtub or shower shall be equipped with hot and cold running water.

23. **Sidewalks**

Sidewalks are required on any paved streets. Contact the Engineering Department at 562-4267 for the location and grade.

24. **Garage Wall Separation**

Attached garages are required to be separated from the dwelling unit by not less than ½ gypsum on the garage side. Doors need to be solid core 1 ¾" in thickness minimum or equivalent. 20 minute rated and must be self-closing. 5/8 Type X or equivalent is required from all habitable rooms above a garage. R302.5.1

25. **Trusses**

No homemade trusses are allowed without an Engineer's seal.

26. **Roof Ventilation**

Where determined necessary by the Building Inspector, enclosed attics and roof rafters shall have cross ventilation. The minimum net opening is 1 to 300 square feet of roof area, provided at least 50% of the vents are located in the upper portion of the roof.

27. **Ice Barrier**

Shall be required to extend from lowest edge of all roof surfaces to a spot 24 inches inside exterior wall lines. (Not including detached accessory structures that contain no conditioned floor area.)

28. **Attic Access**

A 22 x 30 attic access opening is required if there is at least 30" of headroom in the attic.

29. **Insulation Standards**

See attached copy of State Standards for minimum insulation values from the State Energy Office. 2018 IECC Energy code is in effect as of 1 July 2020.

30. **Garage Door Headers**

If you are going to use a 16' garage door and the opening is load bearing, a laminated beam (properly sized) or three, 2 x 12's are approved for the header. Two jack studs are required on each end.

31. **Portal framing**

Portal framing may be required if the side wall is short along your garage door wall. Check the building codes, IRC 2018, Table R602.10.5 for specifics.

32. **Foam Insulation**
Exposed foam insulation in living spaces must be covered. See the Building Inspector for approved covering.
33. **Sheet Rock**
Sheet rock must be fastened to furring strips or studs.
Without Adhesive
 Ceiling: 1/2" or 5/8" sheet rock max. spacing nails is 7", screws is 12".
 Wall: 1/2" or 5/8" sheet rock max. spacing nails is 8", screws is 16"
With Adhesive
 Ceiling: 1/2" or 5/8" sheet rock max. spacing nails is 12", screws is 16".
 Wall: 1/2" or 5/8" sheet rock max. spacing nails is 16", screws is 24" R702.3.5
34. **Ventilation**
Where determined necessary by the Building Inspector due to atmospheric or climatic conditions, enclosed attics and enclosed rafter spaces formed where ceilings are applied direct to the underside of roof rafters shall have cross ventilation for each separate space by ventilating openings protected against the entrance of rain and snow. The net free ventilating area shall be not less than $\frac{1}{150}$ of the area of the space ventilated, except that the area may be $\frac{1}{300}$, provided at least 50% of the required ventilating area is provided by ventilators located in the upper portion of the space to be ventilated at least 3' above eave or cornice vents with the balance of the required ventilation provided by eave or cornice vents. The openings shall be covered with corrosion-resistant metal mesh with mesh openings of 1/4" in dimension.
35. **Stairway & Hallway**
Stairway and hallway minimum finished width is **36" above and below handrails**. R311.7.1
36. **Grade Elevations**
Please contact the Engineering Department for final grade elevation stakes. (562-4267).
37. **Flood Zone**
Flood zone construction requires a Flood Plain Development Permit & Elevation Certification.
38. **Bathroom Ventilation**
Provide ventilation for interior bathrooms. All full bathrooms must be vented to the outside.
39. **Back fill**
Compact all fill thoroughly.
40. **Footings**
Provide continuous footings under dwelling (Including attached garages).
41. **Window Area**
Window area to be equal to 8% of floor area in all habitable rooms. 10 sq. Ft. minimum.
42. **Height**
Houses shall be limited in height to 36 ft.
43. **Headers**
Must use proper headers sized as to International Residential Building Codes.
44. **Rafters**

Truss ties must be used. Approved truss tie down screws may be used in place of truss tie downs.

45. **Wood Separation**

All wood must be separated from concrete with metal (Exception-redwood or treated lumber)

46. **Prefabricated buildings**

Prefabricated buildings must have engineer's seal or state seal.

47. **Town Homes**

Each townhouse shall be considered a separate building and shall be separated by fire-resistance-rated wall assemblies meeting the requirements of section R302.1.

The two living units are to be separated by a 1 hour fire wall on each side with a min. 1" separation between the two walls or a 2 hour common wall. Either way to be a 2 hour fire rating separation. See Inspector for details. R302.2

48. **SWPPP (Storm Water Pollution Prevention Plan)**

NOI (Individual Lot Notice of Intent) and a site plan drawing must be filled out and turned in with the building permit application.

49. **Builder is responsible to call for all inspections. The approval of plans and specifications does not permit the violation of any section of the Building Code, other city ordinance, or state law.**