

# City of Gillette



## Guide for Residential Basement Construction



## Building Inspection Division

Office (307) 686-5260

Inspection Line (307) 686-5256

City of Gillette  
Building Inspection Division  
Guideline to 2021 IRC Residential Construction

This booklet is provided to help answer questions you may have regarding building codes within the City of Gillette. It is **not** intended to answer all questions that may arise on any given project within the community, but to serve as a general guideline. Feel free to contact the Building Inspection Division at (307) 686-5260 if you have any questions.

**Licensing:** If you hire a contractor for your project, you need to make sure they are licensed with the City of Gillette.

**Permits:** Permits are required for building, electrical, plumbing, heating and air conditioning.

**REQUIRED INSPECTIONS**

The following are required inspections and the order in which they need to be completed for new construction, alterations and additions:

Rough Plumbing	After all waste, vent and water piping is installed and under test.
Rough Electric	After all wiring and boxes are installed.
Rough Mechanical	After all venting and ductwork is installed.
Gas	After gas piping is installed, supported and under air test.
Rough Framing	After the rough electrical, plumbing, mechanical and gas inspections are completed and approved and after the roofing, all framing, and fire blocking are complete.

This list does not include any special inspections that may be required and all of the inspections may not apply to every job.

## INSPECTION REQUESTS

Please call (307) 686-5256 and leave a message on the Inspection Line. You will need to have your permit application number and address and the type of inspection you are scheduling. Please include your name and telephone number for the inspector. **In order receive an inspection in the same day, you need to call before 7:00 a.m.** Field inspectors are generally in the office between 8:00 – 9:00 a.m. and 1:00 – 2:00 p.m. if you need to contact them. When a specific time is requested, it will be noted on the request, however all times are approximate. While the Building Inspection Division will attempt to make the inspection at the requested time, conditions in the field may not make this possible all of the time. We would request your understanding and patience if this occurs on your project.

**Plans:** Plans are required for all dwellings and additions. A set of plans includes a floor plan with construction details. The plans should indicate what the scope of work includes. Plans need to be drawn to scale and specify all dimensions, size and spacing of building materials and any other information that is required to show how the construction will be completed. More detailed requirements for a set of plans can be obtained from our office. **See page 17.**

**Ceiling Height:** Portions of a room with a sloping ceiling measuring less than 5 feet, or a furred ceiling measuring less than 7 feet from the finished floor to the finished ceiling, shall not be considered as contributing to the minimum required habitable area for that room.

**Windows:** All habitable rooms shall have an aggregate glazing area of not less than 8 percent of the floor area of such rooms. Natural ventilation shall be through windows, doors, louvers or other approved openings to the outdoor air. Such openings shall be provided with ready access or shall otherwise be readily controllable by the building occupants. The minimum openable area to the outdoors shall be 4 percent of the floor area being ventilated.

**Exceptions:** The glazed areas need not be openable where the opening is not required when an approved mechanical ventilation system capable of producing 0.35 air change per hour in the room is installed or a whole-house mechanical ventilation system is installed capable of supplying outdoor ventilation air of 15 cubic feet per minute (cfm) (78 L/s) per occupant computed on the basis of two occupants for the first bedroom and one occupant for each additional bedroom.

The glazed areas need not be installed in rooms where Exception 1 above is satisfied and artificial light is provided capable of producing an average illumination of 6 foot-candles (65 lux) over the area of the room at a height of 30 inches above the floor level.

**Basement Framing Detail:** With floating wall and fire blocking details on **page 16.**

**Egress Windows:** Basements, habitable attics and **every** sleeping room shall have at least one operable emergency escape and rescue opening. Where basements contain one or more sleeping rooms, emergency egress and rescue openings shall be required in each sleeping room. Where emergency escape and rescue openings are provided, they shall have a sill height of not more than 44 inches above the floor. The net clear opening dimensions required by this section shall be obtained by the normal operation of the emergency escape and rescue

opening from the inside. Emergency escape and rescue openings with a finished sill height below the adjacent ground elevation shall be provided with a window well and the following will apply.

Emergency escape and rescue openings shall open directly into a public way, or to a yard or court that opens to a public way. All emergency escape and rescue openings shall have a minimum net clear opening of 5.7 square feet. To calculate square footage, take height in inches, multiplied by width in inches of opened window and divide by 144. **See page 16 for details and examples.**

**Window Wells:** The minimum horizontal area of the window well shall be 9 square feet, with a minimum horizontal projection and width of 36 inches. The area of the window well shall allow the emergency escape and rescue opening to be fully opened. **Detail on page 16.**

**Exception:** The ladder or steps required shall be permitted to encroach a maximum of 6 inches into the required dimensions of the window well. 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. Ladders or rungs shall have an inside width of at least 12 inches, shall project at least 3 inches from the wall, and shall be spaced not more than 18 inches on center vertically for the full height of the window well.

**Smoke Alarms:** Smoke alarms shall be installed in each sleeping room, outside each separate sleeping area in the immediate vicinity of the bedrooms. When more than one smoke alarm is required to be installed within an individual dwelling unit, the alarm devices shall be interconnected in such a manner that the actuation of one alarm will activate all of the alarms in the individual unit. Smoke alarms shall receive their primary power from the building wiring when such wiring is served from a commercial source, and when primary power is interrupted, shall receive power from a battery. Wiring shall be permanent and without a disconnecting switch other than those required for over current protection.

**Carbon Monoxide Alarms:** For new construction, an approved carbon monoxide alarm shall be installed outside of each separate sleeping area in the immediate vicinity of the bedrooms in dwelling units within which fuel-fired appliances are installed and in dwelling units that have attached garages.

Where work requiring a permit occurs in existing dwellings that have attached garages or fuel fired appliances exist, carbon monoxide detectors shall be installed outside of bedrooms.

### **Exceptions**

1. Work involving exterior surfaces of dwelling, such as the replacement of roofing or siding, or the addition or replacement of windows or doors, or the addition of a porch/deck
2. Installation, alterations or repairs of plumbing or mechanical systems

**Fire Block and Draft Stops:** In combustible construction, fire blocking 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 the roof space. **See detail on page 16.**

Fire blocking shall be provided in wood-frame construction in concealed spaces of stud walls and partitions, including furred spaces and parallel rows of studs or staggered studs, as follows:

- Vertically at the ceiling and floor levels.
- Horizontally at intervals not exceeding 10 feet.
- At all interconnections between concealed vertical and horizontal spaces such as occur at soffits, drop ceilings and cove ceilings.
- In concealed spaces between stair stringers at the top and bottom of the run.
- Enclosed spaces under stairs.
- At openings around vents, pipes, ducts, cables and wires at ceiling and floor level, with an approved material to resist the free passage of flame and products of combustion.
- For the fire blocking of chimneys and fireplaces. Fire blocking of cornices of a two-family dwelling is required at the line of dwelling unit separation.

### **Fire blocking materials:**

- Two-inch nominal lumber.
- Two thicknesses of 1-inch nominal lumber with broken lap joints.
- One thickness of 23/32-inch wood structural panels with joints backed by 23/32-inch wood structural panels.
- One thickness of 3/4-inch particleboard with joints backed by 3/4-inch particleboard.

- One-half-inch gypsum board.
- One-quarter-inch cement-based millboard.
- Batts or blankets of mineral wool, glass fiber, or other approved materials installed in such a manner as to be securely retained in place.

## **FRAMING**

**Under-Stair Protection:** Enclosed accessible space under stairs shall have walls, under-stair surface and any soffits protected on the enclosed side with 1/2-inch gypsum board.

**Sheetrock Installation:** Gypsum board shall be applied at right angles or parallel to framing members. All edges and ends of gypsum board shall occur on the framing members, except those edges and ends that are perpendicular to the framing members. Interior gypsum board shall not be installed where it is directly exposed to the weather or to water. **Fastener requirements on page 14.**

## **ELECTRICAL**

**Sufficient Access and Work Space for Electrical Equipment:** **Detail on page 13.**

**Interior Electrical Panel:** Panel boards and over current protection devices shall not be located in clothes closets, in bathrooms, or over the steps of a stairway.

**Non-Metallic Sheathed Cable (Romex):** Bored holes in framing members for wiring shall be located not less than 1 1/4 inches from the edge of the framing member or shall be protected with a minimum 0.0625-inch steel plate or sleeve, a listed steel plate or other physical protection.

**Neutral Conductor:** No. 6 and smaller must have white or natural gray insulation. Conductors larger than No. 6 may be identified where terminating in enclosures with a white color conductor or tape.

**Outlet, Junction Box, Switch:** Install properly sized outlet or junction box at each outlet, switch or junction point. A junction box may be installed in an attic where there is at least 30 inches of headroom with access and not covered with insulation.

**Number of Conductors in Outlet, Device and Junction Boxes:** Each conductor that originates outside the box and terminates or is spliced within the box shall be

counted once, and each conductor that passes through the box without splice or termination shall be counted once. Each loop or coil of unbroken conductor having a length equal to or greater than twice that required for free conductors shall be counted twice. The conductor fill, in cubic inches, shall be computed using figures on **table below**, no part of which leaves the box, shall not be counted.

**Exception:** An equipment grounding conductor or not more than four fixture wires smaller than No. 14, or both, shall be permitted to be omitted from the calculations where such conductors enter a box from a domed fixture or similar canopy and terminate within that box.

**VOLUME ALLOWANCE REQUIRED PER CONDUCTOR (CUBIC INCHES):**

SIZE OF CONDUCTOR	FREE SPACE IN BOX FOR CONDUCTOR
18 AWG	1.50
16 AWG	1.75
14 AWG	2.00
12 AWG	2.25
10 AWG	2.50
8 AWG	3.00
6 AWG	5.00

**Non-Metallic Sheathed Cable (Romex):** Maximum allowable on-center support spacing for the wiring is 4' 6". Maximum support distance in inches from box or other terminations is 12 inches.

**Make-Up Wire:** At least 6 inches of free conductor, measured from the point in the box where it emerges from its raceway or cable sheath, shall be left at each outlet, junction, and switch point for splices or the connection of luminaries or devices. Each conductor needs to be long enough to extend at least 3 inches outside the opening.

**Outlet Requirements:** Receptacles shall be installed such that no point measured horizontally along the floor line, on any wall space, is more than 6 feet from a receptacle outlet. Receptacles shall be installed in any space 2 feet or more in width (including space measured around corners) and unbroken along the floor line by doorways, fireplaces, and similar openings. A receptacle outlet shall be installed at each wall countertop space that is 12 inches or wider. Kitchen receptacle outlets shall be installed so that no point along the wall line is more



than 24 inches measured horizontally from a receptacle outlet in that space. At least one receptacle outlet shall be installed in bathrooms within 3 feet of the outside edge of each basin. The receptacle outlet shall be located on a wall or partition that is adjacent to the basin or basin countertop, or installed on the side or face of the basin cabinet, not more than 12 inches below the countertop.

**Kitchen Small Appliance Circuits:** Every kitchen shall have at least two 20 amp circuits.

**Bathrooms (Bathroom Branch Circuits):** In addition to the number of branch circuits required by other parts, at least one 20-ampere branch circuit shall be provided to supply bathroom receptacle outlet(s). Such circuits shall have no other outlets.

**Exception:** Where the 20 amp circuit supplies a single bathroom, outlets for other equipment or lighting within the same bathroom shall be permitted to be supplied by one circuit.

**GFCI Outlets:** All 125-volt through 250-volt receptacles installed in the locations specified shall have ground-fault circuit-interrupter protection for personnel.

- Bathrooms
- Kitchens — where the receptacles are installed to serve the countertop surfaces
- Laundry, utility, and wet bar sinks — where the receptacles are installed within 6 feet of the outside edge of the sink. Receptacles installed to serve countertops cannot be installed in the countertop in the face-up position

**Arc Fault Outlets:** All 120-volt, single phase, 15 and 20 amp branch circuits supplying outlets installed in dwelling unit family rooms, dining rooms, living rooms, parlors, libraries, dens, bedrooms, sunrooms, recreation rooms, closets, hallways, or similar rooms or areas shall be protected by a listed arc-fault circuit-interrupter.

**Tamperproof Outlets:** All 125-volt, 15 and 20 amp receptacles shall be listed tamper-resistant receptacles.

**Laundry Equipment:** In addition to the number of branch circuits required, at least one additional 20-ampere branch circuit shall be provided to supply the laundry receptacle outlet(s). This circuit shall have no other outlets.

**Provide Lighting as Follows:** At least one wall switch-controlled lighting outlet shall be installed in every habitable room and bathroom.

**Exceptions:** In other than kitchens and bathrooms, one or more receptacles controlled by a wall switch shall be considered equivalent to the required lighting outlet. Lighting outlets shall be permitted to be controlled by occupancy sensors that are in addition to wall switches, or that are located at a customary wall switch location and equipped with a manual override that will allow the sensor to function as a wall switch. At least one wall-switch-controlled lighting outlet shall be installed in hallways, stairways, attached garages, and detached garages with electric power. At least one wall-switch-controlled lighting outlet shall be installed to provide illumination on the exterior side of each outdoor egress door having grade level access, including outdoor egress doors for attached garages and detached garages with electric power. A vehicle door in a garage shall not be considered as an outdoor egress door. Where one or more lighting outlets are installed for interior stairways, there shall be a wall switch at each floor level and landing level that includes an entryway to control the lighting outlets where the stairway between floor levels has six or more risers. In attics, under-floor spaces, utility rooms and basements, at least one lighting outlet shall be installed where these spaces are used for storage or contain equipment requiring servicing. Such lighting outlet shall be controlled by a wall switch or shall have an integral switch. At least one point of control shall be at the usual point of entry to these spaces. The lighting outlet shall be provided at or near the equipment requiring servicing.

**Grounding Conductors:** In boxes with more than one, grounding conductors must be connected with an approved connector and pigtailed when attaching to the device.

**Clothes Closet Lighting:** The types of luminaries installed in clothes closets shall be limited to surface-mounted or recessed incandescent luminaries with completely enclosed lamps, surface-mounted or recessed fluorescent luminaries, and surface-mounted fluorescent or LED luminaries identified as suitable for installation within the storage area. Incandescent luminaries with open or partially enclosed lamps and pendant luminaries or lamp-holders shall be prohibited. The minimum clearance between luminaries installed in clothes closets and the nearest point of a storage area shall be as follows:

- Surface-mounted incandescent or LED luminaries with a completely enclosed light source shall be installed on the wall above the door or on the

ceiling, provided that there is a minimum clearance of 12 inches (305 mm) between the fixture and the nearest point of a storage space.

- Surface-mounted fluorescent luminaires shall be installed on the wall above the door or on the ceiling provided that there is a minimum clearance of 6 inches.
- Recessed incandescent luminaires or LED luminaires with a completely enclosed light source shall be installed in the wall or the ceiling provided that there is a minimum clearance of 6 inches.
- Recessed fluorescent luminaires shall be installed in the wall or on the ceiling provided that there is a minimum clearance of 6 inches between the fixture and the nearest point of a storage space.
- Surface-mounted fluorescent or LED luminaires shall be permitted to be installed within the storage space where identified for this use.

**Clothes Dryers:** Exhaust ducts shall be supported at 4 foot intervals and secured in place. The insert end of the duct shall extend into the adjoining duct or fitting in the direction of airflow. Ducts shall not be joined with screws or similar fasteners that protrude into the inside of the duct. Ducts shall not be deformed. Transition ducts used to connect the dryer to the exhaust duct system shall be a single length that is listed and labeled in accordance with UL 2158A. Transition ducts shall be a maximum of 8 feet in length and shall not be concealed within construction. The maximum developed length of the exhaust duct shall be 35 feet from the connection to the transition duct from the dryer to the outlet terminal **See table page 11**. Where fittings are used, the maximum length of the exhaust duct shall be reduced in accordance with the Table below and where the exhaust duct is concealed within the building construction, the equivalent length of the exhaust duct shall be identified on a permanent label or tag. The label or tag shall be located within 6 feet of the exhaust duct connection. Protective shield plates shall be placed where nails or screws from finish or other work are likely to penetrate the clothes dryer exhaust duct. Shield plates shall be placed on the finished face of all framing members where there is less than 1 1/4 inches between the duct and the finished face of the framing member. Protective shield plates shall be constructed of steel and shall have a minimum thickness of 0.062 inches and shall extend a minimum of 2 inches above sole plates and below top plates.

<b>DRYER EXHAUST DUCT FITTING TYPE</b>	<b>EQUIVALENT LENGTH DEDUCTIONS</b>
4 inch radius mitered 45 degree elbow	2 feet 6 inches
4 inch radius mitered 90 degree elbow	5 feet
6 inch radius smooth 45 degree elbow	1 foot
6 inch radius smooth 90 degree elbow	1 foot 9 inches
8 inch radius smooth 45 degree elbow	1 foot
8 inch radius smooth 90 degree elbow	1 foot 7 inches
10 inch radius smooth 45 degree elbow	9 inches
10 inch radius smooth 90 degree elbow	1 foot 6 inches

**Kitchen Ranges:** Freestanding or built-in ranges shall have a vertical clearance above the cooking top of not less than 30 inches to unprotected combustible material. Reduced clearances are permitted in accordance with the listing and labeling of the range hoods or appliances.

**Prefabricated Fireplaces and Stoves:** Factory-built fireplaces shall be listed and labeled and shall be installed in accordance with the conditions of the listing. Factory-built chimneys shall be listed and labeled and shall be installed and terminated in accordance with the manufacturer's installation instructions.

### **GAS PIPING, INSTALLATION AND TESTING**

**Gas Pipe and Fittings:** Cast-iron pipe shall not be used. Steel and wrought-iron pipe shall be at least of standard weight (Schedule 40) and shall comply with one of the following: ASME B 36.10, 10M; ASTM A 53/A 53M; or ASTM A 106. Seamless copper, aluminum alloy or steel tubing shall be permitted to be used with gases not corrosive to such material. Steel tubing shall comply with ASTM A 254. Copper tubing shall comply with standard Type K or L of ASTM B 88 or ASTM B 280. Copper and brass tubing shall not be used if the gas contains more than an average of 0.3 grains of hydrogen sulfide per 100 standard cubic feet of gas (0.7 milligrams per 100 liters). Corrugated stainless steel tubing shall be listed in accordance with ANSI LC 1/CSA 6.26. Plastic pipe, tubing and fittings used to supply fuel gas shall conform to ASTM D 2513. Pipe shall be marked "Gas" and "ASTM D 2513."

**Gas Line Test:** The test pressure to be used shall be not less than one and one-half times the proposed maximum working pressure, but not less than 3 psig (20 kPa gauge), irrespective of design pressure. Where the test pressure exceeds 125

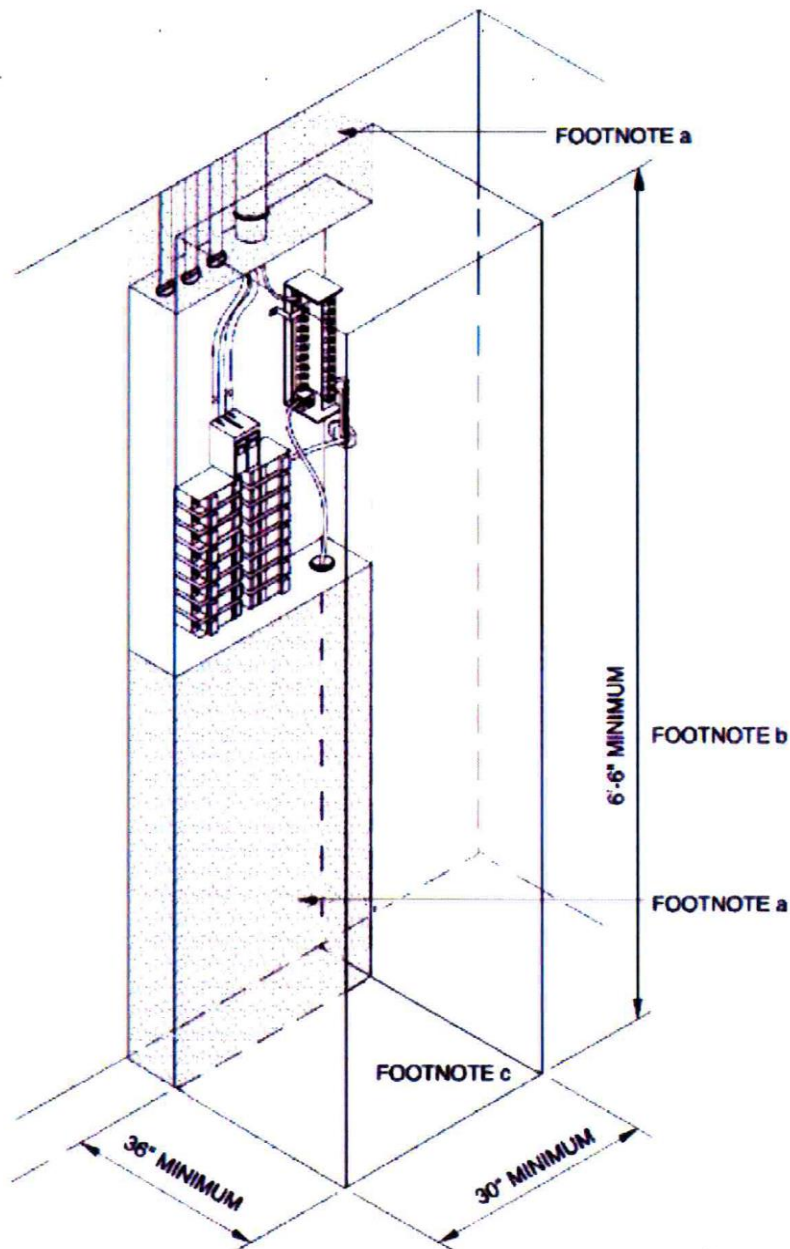
psig (862 kPa gauge), the test pressure shall not exceed a value that produces a hoop stress in the piping greater than 50 percent of the specified minimum yield strength of the pipe.

**Gas Appliance Connectors:** Connectors shall not exceed 6 feet in overall length. Measurement shall be made along the centerline of the connector. Only one connector shall be used for each appliance. Connector shall not be concealed in any floor, wall or ceiling.

## **PLUMBING**

**Materials:** All materials used shall be installed in strict accordance with the standards under which the materials are accepted and approved. In the absence of such installation procedures, the manufacturer's installation instructions shall be followed. Where the requirements of referenced standards or manufacturer's installation instructions do not conform to the minimum provisions of this code, the provisions of this code shall apply.

Sufficient access and working space shall be provided and maintained around all electrical equipment to permit ready and safe operation and maintenance of such equipment



### WORKING SPACE AND CLEARANCES

- a. Equipment, piping and ducts foreign to the electrical installation shall not be placed in the shaded areas extending from the floor to a height of 6 feet above the panelboard enclosure, or to the structural ceiling, whichever is lower.
- b. The working space shall be clear and unobstructed from the floor to a height of 6.5 feet.
- c. The working space shall not be designated for storage.
- d. Panelboards, service equipment and similar enclosures shall not be located in bathrooms, toilet rooms, clothes closets or over the steps of a stairway.
- e. Such work spaces shall be provided with artificial lighting where located indoors.

## Sheetrock Nailing:

TABLE R702.3.5  
MINIMUM THICKNESS AND APPLICATION OF GYPSUM BOARD AND GYPSUM PANEL PRODUCTS

THICKNESS OF GYPSUM BOARD OR GYPSUM PANEL PRODUCTS (inches)	APPLICATION	ORIENTATION OF GYPSUM BOARD OR GYPSUM PANEL PRODUCTS TO FRAMING	MAXIMUM SPACING OF FRAMING MEMBERS (inches o.c.)	MAXIMUM SPACING OF FASTENERS (inches)		SIZE OF NAILS FOR APPLICATION TO WOOD FRAMING <sup>c</sup>
				Nails <sup>a</sup>	Screws <sup>b</sup>	
<b>Application without adhesive</b>						
$\frac{3}{8}$	Ceiling <sup>d</sup>	Perpendicular	16	7	12	13 gage, $1\frac{1}{4}$ " long, $\frac{19}{64}$ " head; 0.098" diameter, $1\frac{1}{4}$ " long, annular-ringed; or 4d cooler nail, 0.080" diameter, $1\frac{3}{8}$ " long, $\frac{7}{32}$ " head.
	Wall	Either direction	16	8	16	
$\frac{1}{2}$	Ceiling	Either direction	16	7	12	13 gage, $1\frac{7}{8}$ " long, $\frac{19}{64}$ " head; 0.098" diameter, $1\frac{1}{4}$ " long, annular-ringed; 5d cooler nail, 0.086" diameter, $1\frac{5}{8}$ " long, 15/64" head; or gypsum board nail, 0.088" diameter, $1\frac{5}{8}$ " long, $\frac{9}{32}$ " head.
	Ceiling <sup>d</sup>	Perpendicular	24	7	12	
	Wall	Either direction	24	8	12	
	Wall	Either direction	16	8	16	
$\frac{5}{8}$	Ceiling	Either direction	16	7	12	13 gage, $1\frac{5}{8}$ " long, $\frac{19}{64}$ " head; 0.098" diameter, $1\frac{3}{8}$ " long, annular-ringed; 6d cooler nail, 0.092" diameter, $1\frac{7}{8}$ " long, $\frac{1}{4}$ " head; or gypsum board nail, 0.0915" diameter, $1\frac{7}{8}$ " long, $\frac{19}{64}$ " head.
	Ceiling	Perpendicular	24	7	12	
	Type X at garage ceiling beneath habitable rooms	Perpendicular	24	6	6	$1\frac{7}{8}$ " long 6d coated nails or equivalent drywall screws. Screws shall comply with Section <a href="#">R702.3.5.1</a>
	Wall	Either direction	24	8	12	13 gage, $1\frac{5}{8}$ " long, $\frac{19}{64}$ " head; 0.098" diameter, $1\frac{3}{8}$ " long, annular-ringed; 6d cooler nail, 0.092" diameter, $1\frac{7}{8}$ " long, $\frac{1}{4}$ " head; or gypsum board nail, 0.0915" diameter, $1\frac{7}{8}$ " long, $\frac{19}{64}$ " head.
	Wall	Either direction	16	8	16	
<b>Application with adhesive</b>						
$\frac{3}{8}$	Ceiling <sup>d</sup>	Perpendicular	16	16	16	Same as above for $\frac{3}{8}$ " gypsum board and gypsum panel products.
	Wall	Either direction	16	16	24	
$\frac{1}{2}$ or $\frac{5}{8}$	Ceiling	Either direction	16	16	16	Same as above for $\frac{1}{2}$ " and $\frac{5}{8}$ " gypsum board and gypsum panel products, respectively.
	Ceiling <sup>d</sup>	Perpendicular	24	12	16	
	Wall	Either direction	24	16	24	
Two $\frac{3}{8}$ layers	Ceiling	Perpendicular	16	16	16	Base ply nailed as above for $\frac{1}{2}$ " gypsum board and gypsum panel products; face ply installed with adhesive.
	Wall	Either direction	24	24	24	

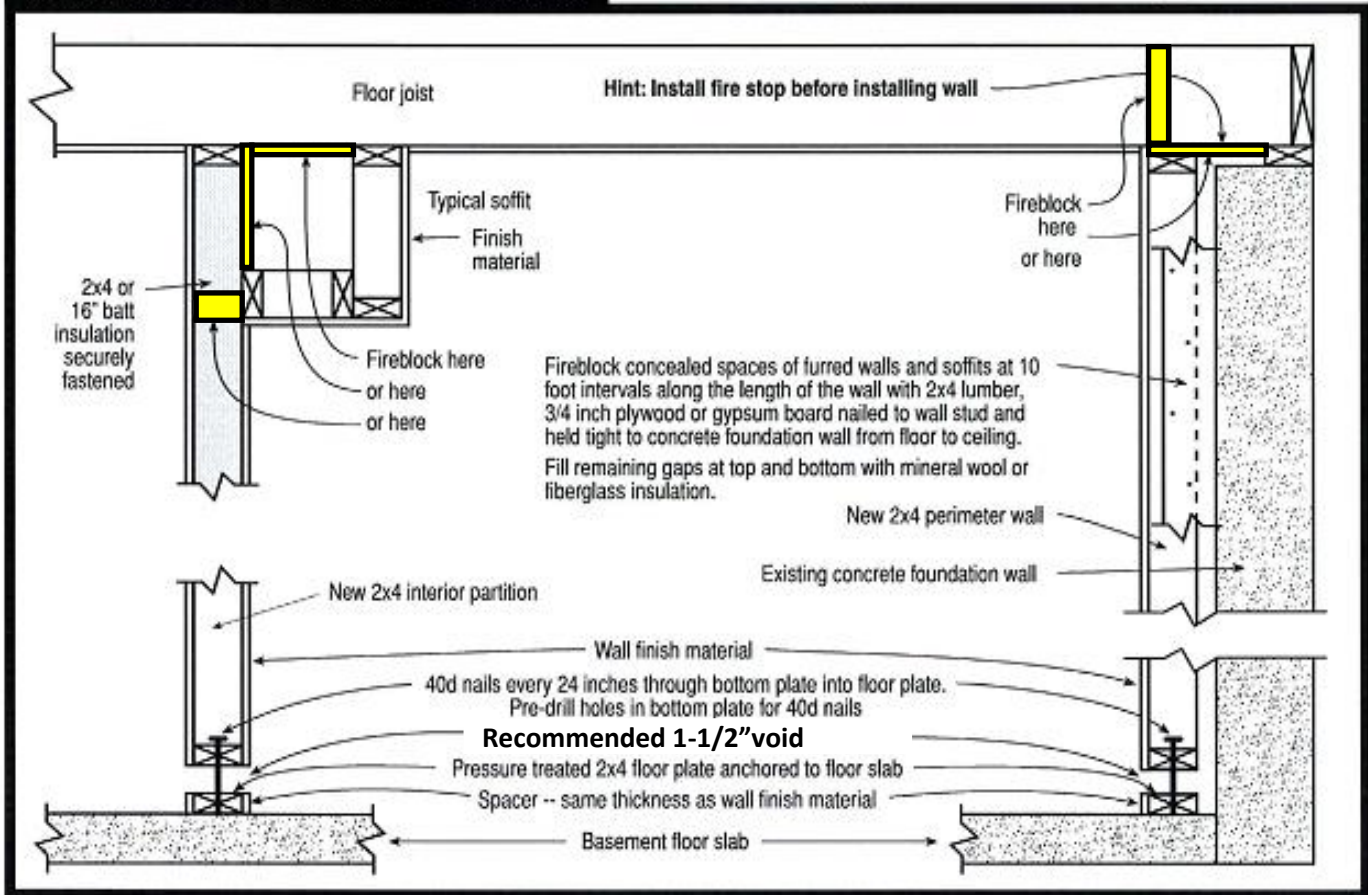
- For application without adhesive, a pair of nails spaced not less than 2 inches apart or more than 2 1/2 inches apart may be used with the pair of nails spaced 12 inches on center.
- Screws shall be in accordance with Section R702.3.6. Screws for attaching gypsum board or gypsum panel products to structural insulated panels shall penetrate the wood structural panel facing not less than 7/16 inch.
- Where cold-formed steel framing is used with a clinching design to receive nails by two edges of metal, the nails shall be not less than 5/8 inch longer

than the gypsum board or gypsum panel product thickness and shall have ringed shanks. Where the cold-formed steel framing has a nailing groove formed to receive the nails, the nails shall have barbed shanks or be 5d, 13 1/2 gage, 15/8 inches long, 15/64-inch head for 1/2-inch gypsum board; and 6d, 13 gage, 1 7/8 inches long, 15/64-inch head for 5/8-inch gypsum board.

- Three-eighths-inch-thick single-ply gypsum board or gypsum panel product shall not be used on a ceiling where a water-based textured finish is to be applied, or where it will be required to support insulation above a ceiling. On ceiling applications to receive a water-based texture material, either hand or spray applied, the gypsum board shall be applied perpendicular to framing. When applying a water-based texture material, the minimum gypsum board thickness shall be increased from 3/8 inch to 1/2 inch for 16-inch on center framing and from 1/2 inch to 5/8 inch for 24-inch on center framing or 1/2-inch sag-resistant gypsum ceiling board shall be used.
- Type X gypsum board for garage ceilings beneath habitable rooms shall be installed perpendicular to the ceiling framing and shall be fastened at maximum 6 inches o.c. by minimum 1 7/8 inches 6d coated nails or equivalent drywall screws.

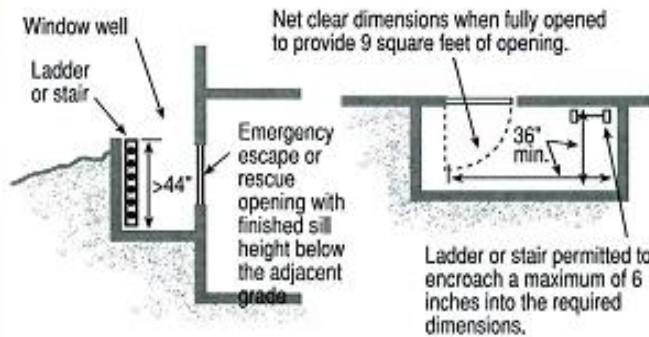


# Basement Finish Details



## 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.

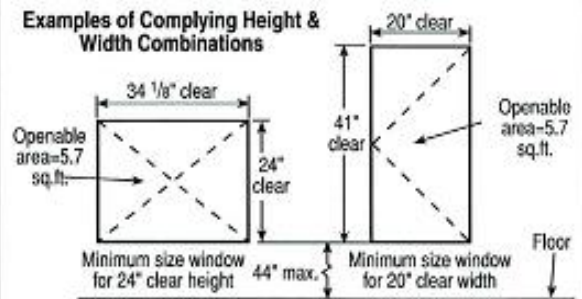


## Emergency Escape & Rescue Window

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 the window should be openable from the inside with normal operation and without the use of tools, keys or effort.

### Examples of Complying Height & Width Combinations



Example of acceptable window openings for heights and widths

Width	20	20.5	21	21.5	22	22.5	23	23.5	24	24.5	25	25.5	26	26.5	27
Height	41	40	39.1	38.2	37.3	36.5	35.7	34.9	34.2	33.5	32.8	32.2	31.6	31	30.4
Width	27.5	28	28.5	29	29.5	30	30.5	31	31.5	32	32.5	33	33.5	34	34.2
Height	29.8	29.3	28.8	28.3	27.8	27.4	26.9	26.5	26.1	25.7	25.3	24.9	24.5	24.1	24

# Basement Plan Example

