

# BASEMENT CONVERSION



## DOCUMENT SUBMITTAL LIST

- Permit Application for Construction or Use.* Application must include authorized signature from the property owner if not owner occupied.
- Three copies of plans, drawn to scale (1/4 inch equals 1 foot preferred), including a plan view, elevation details, and materials list. Label all rooms on the drawings and include the location of windows, doors, furnaces, water heaters, electrical service panels, receptacle outlets, switches, light fixtures, smoke/CO detectors, sewer clean out, water meter, plumbing fixtures, supply air vents, and return air vents. (see last page for visual example)
- Copy of plumber's license and letter of intent from the plumber. Electricians must be registered with the City of Warrenville.

**Failure to provide any of the above documents may result in processing delays.**

## GENERAL INFORMATION AND FEES

1. A permit is required for the conversion, remodeling or alteration of basements.
2. The application review period averages two weeks. Applicants are contacted when the permit is ready for payment and issuance.
3. If work commences prior to permit issuance, the permit fee shall be doubled.
4. A list of required inspections is provided at the time of permit issuance. Inspections can be scheduled at least one day prior to the desired inspection date by calling the Warrenville Community Development Department (630-393-9050).

5. A permit may become invalid if work does not begin within 180 days of issuance, or if construction has been halted and not resumed for a period of 60 consecutive days.

6. Fees:	Plan review fee	\$30.00 up to 400 square feet, \$40.00 up to 1000 square feet, \$50.00 up to 1,600 square feet
	Building permit fee	\$6.00 per \$1,000 valuation, minimum \$30.00
	Electrical permit fee	\$22.00 + \$1.00 per first 20 lighting fixtures and \$.65 thereafter + \$1.00 per first 20 receptacles/switches and \$.65 each thereafter
	Mechanical permit fee	Included in building permit fee
	Plumbing fee	\$22.00 + \$8.75 per each fixture
	Certificate of Occupancy	\$50.00

Bond: \$100.00 refundable building bond must be paid at the time of building permit issuance. This bond is refundable upon completion and approval of the project in accordance with all applicable City Ordinances. The bond will be returned in the manner in which it was initially submitted at permit issuance, i.e., check, cash or credit card, after approval of final inspection.

The fees listed in this document are for general guidance and not necessarily comprehensive. Required utility upgrades, changes made to the approved permit, or items not mentioned will be assessed accordingly.

7. All work performed shall comply with the 2006 International Residential Code, 2015 Illinois Energy Conservation Code, 2014 Illinois State Plumbing Code, 2008 National Electrical Code, and all local amendments.
8. Approved construction documents shall be available on site at all times.
9. Alterations to the approved plans must be resubmitted to the Chief Code Official in writing for review and approval prior to construction.

**MINIMUM ROOM REQUIREMENTS** (dimensions must be indicated on the drawings)

Habitable rooms\* may not be less than seven feet in any direction and not less than 70 square feet of floor area.

Hallways and stairways must be provided with a clear width of not less than 36 inches.

In bathrooms, shower stalls require no less than 32-inch clear floor space in any direction; center line of toilet shall not be closer than 15 inches to wall; and both sinks and toilets shall be provided with a clear access approach of at least 21 inches.

Habitable rooms\*, hallways, kitchens, laundries, baths, and toilet rooms, shall have a seven-foot ceiling height.

In utility and mechanical rooms/spaces, the furnace and water heater must be provided with sufficient combustion air. Louvered doors or air intake grills may need to be installed to assure the available combustion air is not reduced. If the existing exterior walls are sealed extra tight, a dedicated outside air supply duct may need to be installed to assure ample combustion air is available for the gas appliances.

Sufficient space on all sides of the appliances is necessary for servicing and clearance from combustible materials (check with the appliance label or manufacturer's specifications for clearance requirements). Code requires an access opening not less than the width of the appliance.

\*Habitable rooms are rooms or spaces for sleeping, eating, office, recreation, dens, and similar uses.

**EMERGENCY ESCAPE OPENINGS**

At least one emergency egress window or door providing escape directly outdoors is required in the basement and in each sleeping room. This is a requirement for all houses regardless of when they were constructed. The window or door is required to operate from the inside of the dwelling without the need for a key, tool, or special knowledge. If the basement build-out project requires new or additional emergency escape windows, a detailed drawing provided by a registered design professional will be required to assure proper support is maintained for the existing structure.

**EGRESS WINDOW REQUIREMENTS**

The bottom edge of the egress window opening cannot exceed 44 inches from the interior finished floor.

The minimum opening area of the egress window is 5.7 square feet.

The minimum egress window opening height is 24 inches high (H).

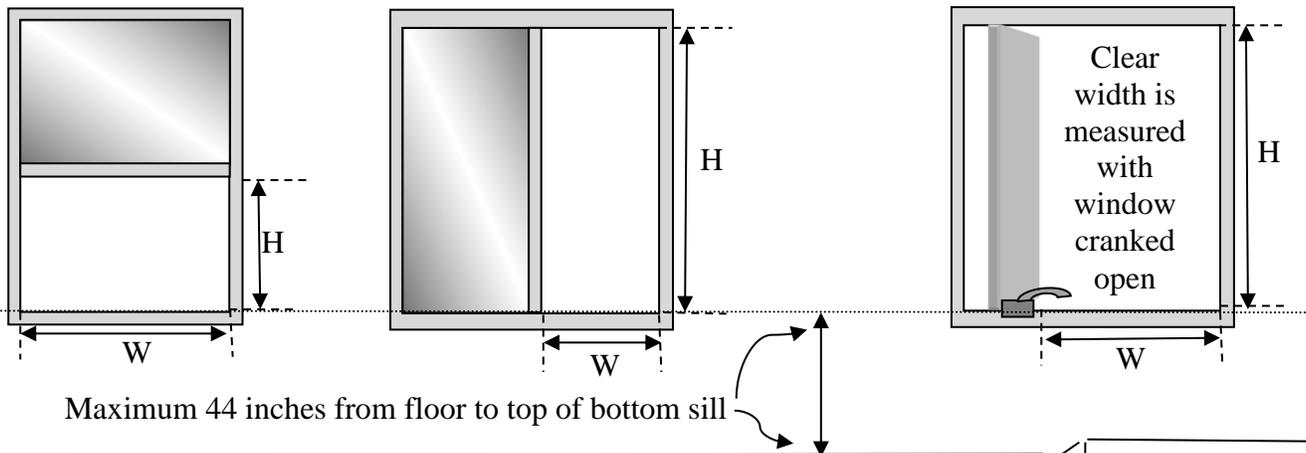
The minimum egress window opening is 20 inches wide (W).

Note that a 24-inch by 20-inch window will not provide the minimum required 5.7-square foot opening. A 24-inch opening in height would require at least a 34¼-inch clear width opening. A 20-inch opening in width would require at least a 41-inch height opening.

Single Hung Window

Sliding Window

Casement Window



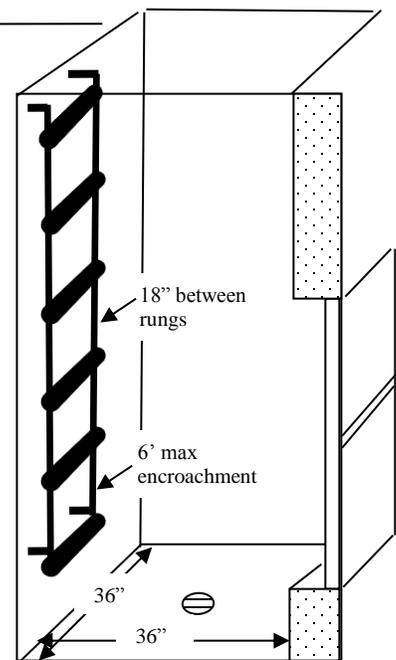
**EGRESS WINDOW WELLS**

Egress window wells are required where the bottom of the egress window is below ground level.

The egress well must not interfere with the egress window opening to full capacity. The distance from the egress window to the back of the egress well must be at least 36 inches. The minimum area of the egress well must be nine square feet (width x projection= not less than 9 s.f.).

**EGRESS LADDERS AND/OR STEPS**

Permanently affixed egress ladders and/or steps are required on window wells deeper than 44 inches below the top of the window well wall. An egress ladder or step may encroach up to six inches into well. Steps, and/or distance between rungs of the ladder, cannot exceed 18 inches. The rungs of an egress ladder must be 12 inches wide or greater and must project a minimum of three inches away from the back wall, but cannot exceed 6 inches from the back of the wall.



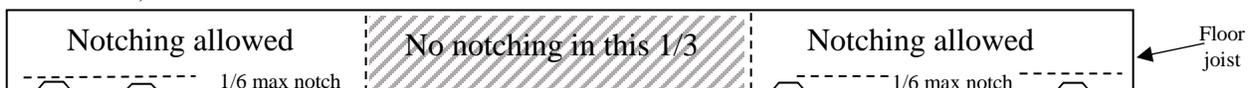
**EGRESS WELL COVER AND/OR WELL GRATES**

Egress wells require fall protection whenever the difference between the adjoining ground and the bottom of the window well are greater than 30 inches. This can be accomplished with a removable cover and/or protective grates. When covers or grates are installed, they are required to be easily opened or removed from the inside of the egress well without the use of keys, tools, or special knowledge. These requirements are intended to ensure an average, able-bodied person, would be able to both fit through, and lift themselves up and out of, the window well. Keep in mind that snow and ice accumulations may need to be cleared away during the winter months.

**CONSTRUCTION REQUIREMENTS**

The sill plate (bottom 2x4) of a framed wall is required to be preservative treated or separated from the concrete slab by an impervious moisture barrier.

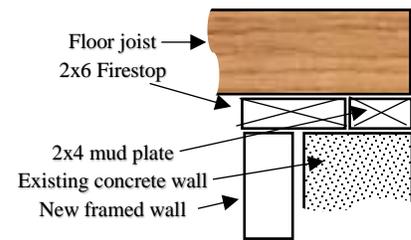
Notching of solid floor joists (the ceiling) is restricted to only the outer third of the overall joists and only allowed to be notched one-sixth the depth of the joist (example: 1/6 of nominal 2x8 would be 1.2 inches).



Drilled holes shall not exceed one-fourth the depth of the joist and not be closer than two inches from any edge.

Fire blocking is required wherever the wall joins the ceiling perpendicular to the ceiling joists. At the concrete exterior walls this can be accomplished by inserting a 2x6 or 2x8 between the top of the concrete foundation wall and the bottom of the floor joists.

Draft stopping is required between the framed wall and the concrete foundation wall every ten feet measured horizontally.



## **INSULATION**

The Illinois Energy Conservation Code requires habitable basements to be insulated. Two common methods are:

1. Attach continuous R-15 polystyrene sheathing directly to the concrete foundation wall and seal all joints. Then frame the cavity wall in front of or onto the insulation sheathing.
2. Frame the wall and fill the cavities with R-19 fiber insulation. A half-inch air gap should be provided to prevent moisture from wicking from the concrete to the fiber insulation.

Plastic/polyethylene should never be placed between any fiber insulation fill and the gypsum board sheathing, as this could trap moisture and foster an environment for mold growth.

## **WALL AND CEILING COVERINGS**

All framed walls are required to be covered with a minimum of half-inch thick gypsum wallboard. Gypsum wallboard is required to be fastened to the walls with nails spaced every eight inches or with drywall screws spaced every 16 inches. Gypsum board installed on ceilings must be fastened every seven inches with nails or with screws spaced every 12 inches.

## **MECHANICAL SYSTEMS**

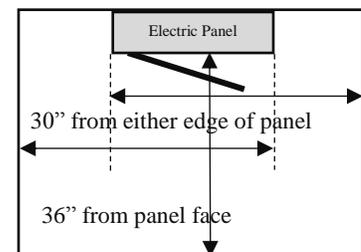
Habitable spaces are required to be provided with a means to supply and circulate fresh air. The ventilation system shall include supply and return air capable of heating habitable spaces to a temperature of not less than 68 degrees. Exception: Return air vents are not permitted to be installed in bathrooms.

Bathrooms are required to be equipped with a ventilation fan capable of removing at least 50 cubic feet per minute to expel moisture and foul air directly outdoors.

## **ELECTRICAL REQUIREMENTS**

A working space of not less than 30 inches wide and 36 inches deep is required in front of the electrical service panel. Electrical panels, switches, and receptacles are required to be accessible so that repairs and maintenance can be performed without the need to destroy finished walls and ceilings.

Electrical service panels are not to be located within any bathroom or closet.



Only one circuit conductor is permitted to be attached to a circuit breaker or fuse.

All wiring is to be run in conduit or EMT. Flexible metallic conduit or Greenfield™, may be used for light fixtures in drop ceilings. Cable wiring methods such as non-metallic cable, Romex™, BX, or armor cable are not permitted.

Plaster rings must be flush with the finished wall or ceiling surface.

The gap between the edge of the plaster ring and the gypsum board is not permitted to exceed 1/8 of an inch.

All electrical connections must be accessible by means of an approved electrical junction box cover, fixture, or outlet cover.

All electrical conductors shall be color coded as follows:

- Green or bare copper conductor for grounding and bonding.
- White or grey for the grounded conductor, generally referred to as the neutral wire.
- All other colors for the ungrounded conductor, often referred as the hot leg or hot wire.

### REQUIRED CIRCUITS

14 AWG-size conductors shall be protected with a 15-amp circuit breaker, 20 AWG-size conductors with a 20-amp circuit breaker, and 10-AWG size conductors with a 30-amp circuit breaker.

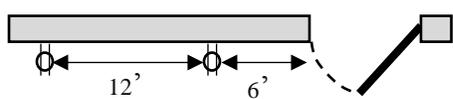
In general, at least one 15-amp circuit for every 600 square feet of floor space is required for lighting and general-purpose outlet receptacles.

Each bathroom shall be provided with at least one 20-amp circuit.

Laundries shall be provided with a 20-amp circuit plus an additional circuit if an electric dryer is installed.

Kitchenette and bar counters shall be provided with a 20-amp circuit.

### ELECTRICAL OUTLETS



Receptacle outlets shall be provided along all walls that are two feet or wider. The receptacles shall be spaced so that no plug connection point along the wall will be greater than six feet.

Receptacle outlets in the bathroom shall be located within 36 inches of the outside edge of the sink.

Receptacle outlets are required to be three-prong and tamper-resistant type.

Ground Fault Circuit Interrupter (GFCI) devices are required in all bathrooms, bar and kitchenette countertop areas, and in all unfinished basement areas.

Arc Fault Circuit Interrupters (AFCI) are required for all other general purpose circuits.

A switched lighting outlet is required for every room. Lighting outlets may be ceiling luminaires or one side of a duplex receptacle.

Stairways must be illuminated and controlled with a three-way switch at the top and bottom of the stairway.

Electrical boxes for ceiling mounted fixtures (except those in closets and hallways) are required to be rated for use with ceiling fans.

Closet fixtures must be rated for use in closets and positioned not closer than 12 inches to the nearest storage shelf or hanger.

Light fixtures installed in or within three feet of a tub or shower shall be rated for such use. In no case shall a pendent lighting fixture be located within this space.

## **PLUMBING**

A riser diagram must be submitted for any proposed plumbing installations (see illustration). Please indicate if any portion of the plumbing was installed as a rough-in when the house was originally built.

Chlorinated polyvinyl chloride (CPVC), Poly butylene (PB), and cross linked Polyethylene (PE), are not permitted for water distribution.

Shut-off valves are required on the fixture supply lines to each plumbing fixture except for tubs and shower supply lines.

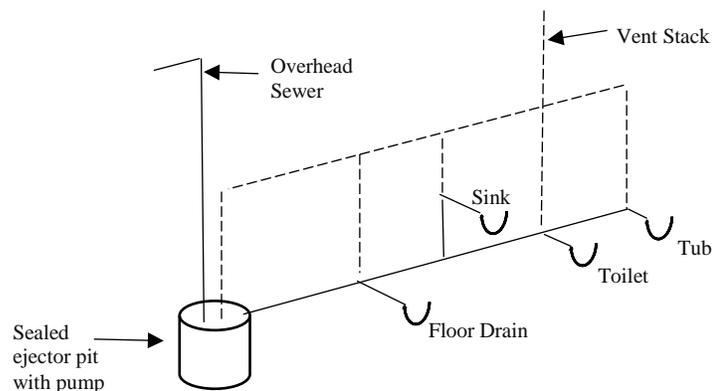
All shower control valves require an anti-scalding mixer set at a maximum temperature of 115 degrees.

Drainage pipes three inches or less in diameter require a slope of at least  $\frac{1}{4}$  inch per foot of horizontal length. Drainage pipes larger than three inches in diameter require a slope of at least one inch per foot of horizontal length. Be sure to calculate the distance and slope of the drain pipe from the fixture to the existing building drain or sewage ejector pit when planning the location of the plumbing fixtures.

All plumbing fixtures, except toilets, require a p-trap.

All PVC pipe must be coated with a primer prior to cementing joints.

All gas valves, plumbing valves, clean-out fittings, and water meters must remain accessible without the need to destroy finished wall and ceilings.

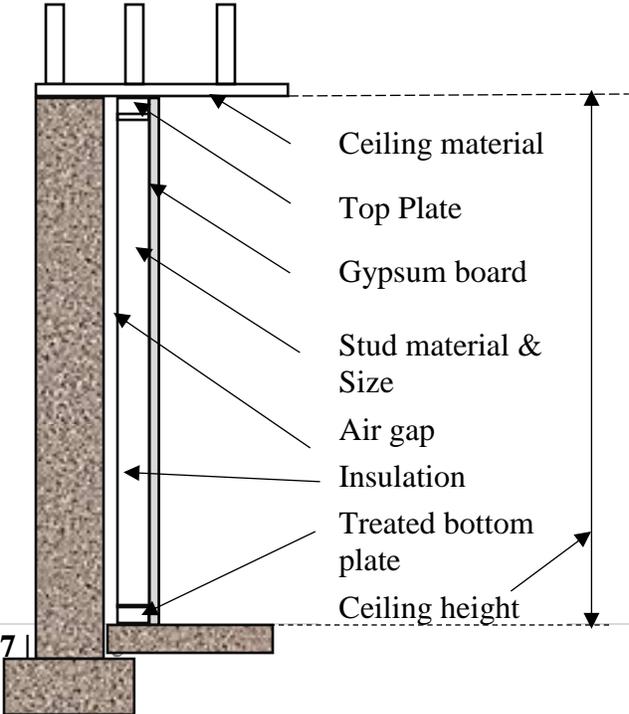
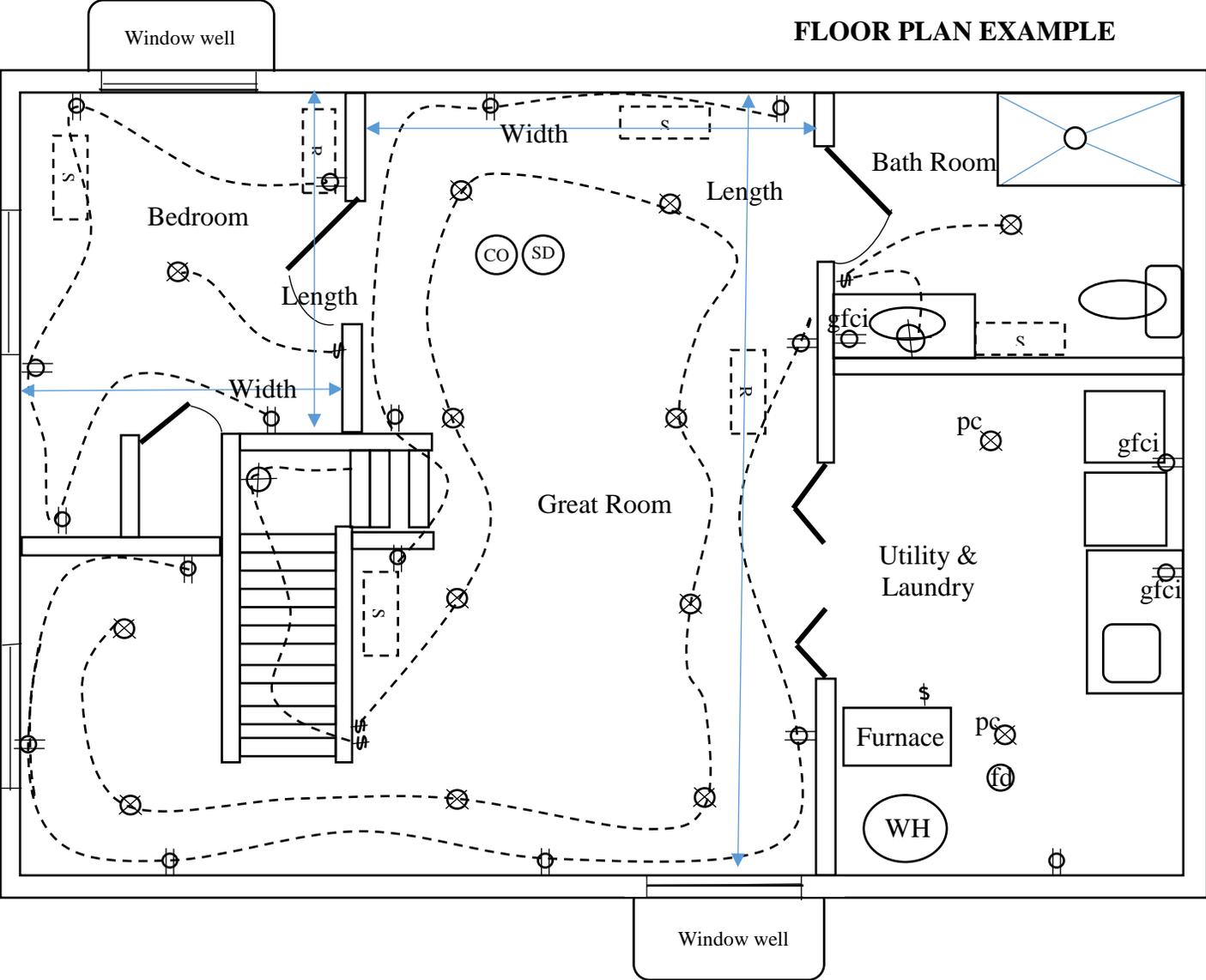


**Approved construction documents shall be available on site at all times.**

**Alterations to the approved plans must be resubmitted to the Building Department in writing for review and approval prior to construction.**

**Where discrepancies between this guide and the codes may occur, the provisions of the code shall prevail.**

# FLOOR PLAN EXAMPLE



PLAN SYMBOLS	
pc ⊗	pull chain lighting
⊙ (WH)	water heater
⊙ (fd)	floor drain
⊙	electrical receptacle