



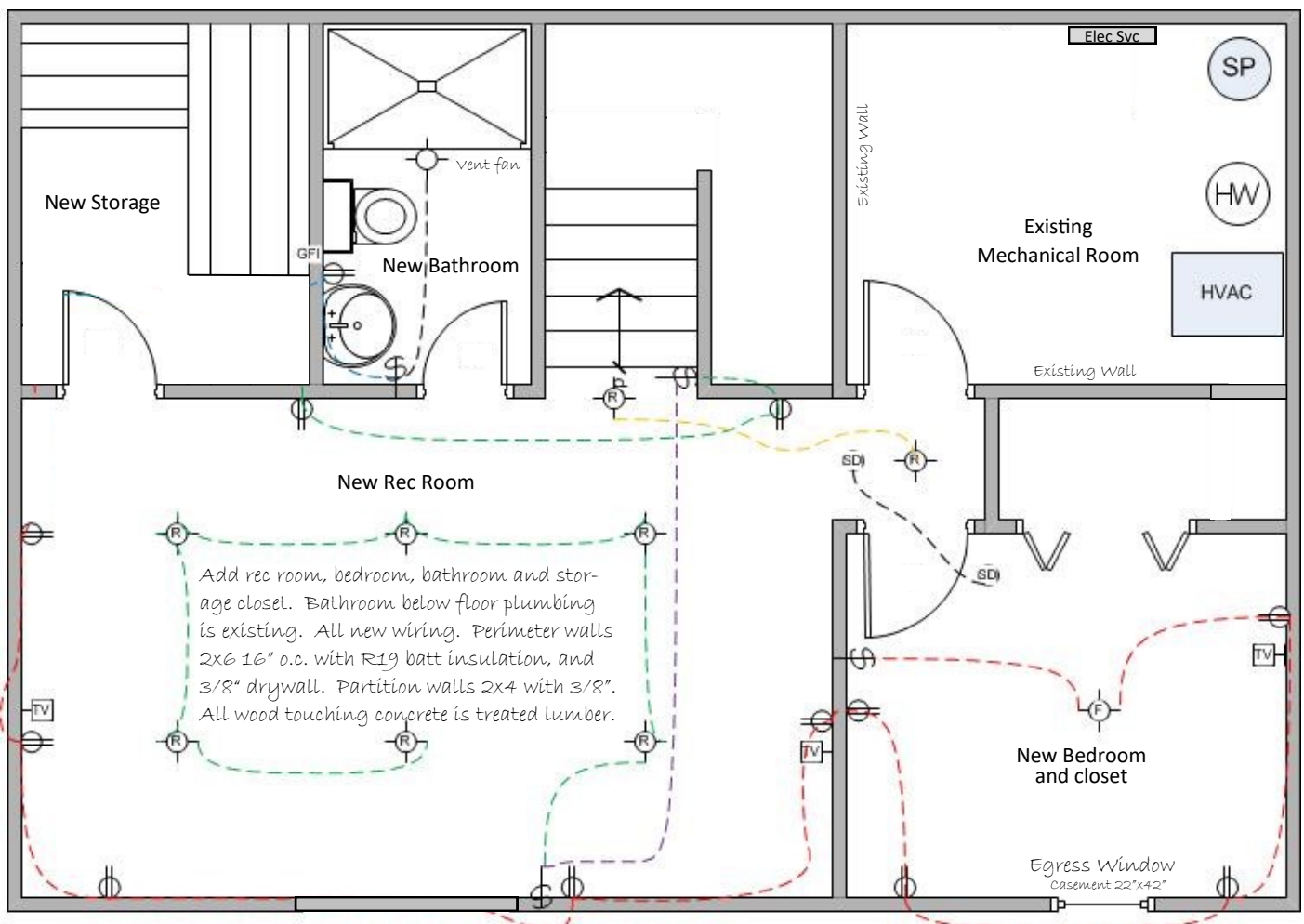
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BASEMENT FINISH

2015 IRC

For your basement remodel you will need to submit a diagram of your existing basement with your proposed changes. Your drawing will need to include as much information as possible. Include approximate room dimensions, use of proposed and existing rooms, ceiling heights, stairway location. Show new plumbing, electrical and ductwork. If walls are being constructed near your electrical panel or furnace, note the clearance area around them. Identify any modifications to the existing structure such as posts, beams and floor joists. Note sizes of existing windows and doors and note any proposed new windows or doors. Unless a major hazard exists, only the portion of your project that is new will be required to meet code. See the example sketch below.

Many code requirements come into play when creating living space in a basement. See the reverse side of this handout for typical requirements that may pertain to your project.



This brochure is intended to explain some of the requirements for residential basement finish. If you have further questions, please contact the Waterloo Building Department.

Ceiling Heights. The required finished ceiling height for habitable rooms such as a rec room or bedroom is 7'. Beams, girders, ducts or other obstructions in basement habitable space can be a minimum of 6'4" above the finished floor. The required finished ceiling height for non-habitable rooms such as a mechanical room, bathroom, laundry room or storage room is 6' 8".

Egress. In an existing basement it is not required to add an egress window or door unless a sleeping room is being added. If a sleeping room is being added, then the egress must be located in the sleeping room. Please see the "Windows" handout for egress window and window well requirements.

Smoke Alarms. Alterations to a residence require that the smoke detector system be brought up to code. Required locations for smoke detectors are one on each level, one in each sleeping room and one outside the immediate vicinity of sleeping rooms. Where framing is exposed, such as in an unfinished basement, hard wired smoke detectors will be required to be installed. Other finished locations that require a detector can be solely battery operated. Carbon Monoxide alarms also may be required in the immediate vicinity outside sleeping rooms. See the "Smoke Alarm" handout for full requirements.

Bathrooms. Bathrooms are required to contain a minimum of a 3 square foot window, one half of which must be operable. A mechanical exhaust capable of 50 cfm exhaust may be installed in lieu of the window requirement. Exhaust air must discharge directly to the outside of the building. Toilets and sinks require 21" of clearance in front of each. Toilets and sinks require a distance of 15" between any side wall or other fixture and the center line of each toilet or sink. Showers are required to be a minimum of 30" x 30" with a 24" clearance in front of the opening. Bathtub and shower spaces shall be finished with a non absorbent surface that extends to a height of not less than 6' above the floor.

Framing, insulation and fire blocking. All wood framing touching concrete must be rated for contact with concrete. Typical wall construction is 2x6 or 2x4 framing 16" on center with 3/8" drywall applied with nails spaced every 8" or screws spaced at 16". A drywall inspection is not required before you mud & tape. Consult the "Notching and Boring" handout to determine maximum framing cuts for electrical wiring, plumbing or ductwork. Perimeter walls are required to be insulated to an R19 value. This can be accomplished through a variety of insulating methods. Vapor retarder products are not required below grade. Fire blocking must be installed in concealed spaces of wood-furred walls at the ceiling level, at 10' intervals along the length of the wall and at all intersections between stud walls and soffits or dropped ceilings. Fire blocks may be constructed of 2" lumber or two 1" thicknesses of lumber with broken lap joints, half inch gypsum or fiberglass batt secured in place.

Fuel Burning Appliances, Electrical Service and wiring. Adequate combustion air for furnaces and water heaters must be provided for fuel burning appliances to operate properly. Furnaces shall maintain clearances in accordance with the manufacturer's instructions and minimum of 30" clear working space must be provided in front of furnaces and water heaters. Maintenance or removal of each appliance must be possible without removing any walls, piping or wiring. Furnaces and water heaters cannot be located in a bedroom or a 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 a self closing device installed. Your electrical service panel requires a 30" wide by 36" deep minimum work space in front of it with a minimum height of 6'6". ALL outlets in a basement are required to be Arc Fault and GFCI protected.

Stairway. A 3 way light is required with a switch at the top and at the bottom of the stairs. The required headroom for a stairway is 6' 8". The minimum run for the step is 10" and maximum rise is 7 3/4". Four or more risers requires a continuous handrail that returns to the wall at the top and bottom. Four or more risers with a rise of more than 4" each requires backers on each step. Any portion of the stairway that is not enclosed by walls and is more than 30" above the floor requires a guardrail. See the "Residential Stairway" handout for full requirements.

Permits. Homeowners or contractors are required to take out their own permits for the work they are doing. Building, electrical, plumbing and HVAC permits can all be required for a basement remodel depending on the extent of your project. Owner occupied residences can take out all permits for work that they are doing. Property owners of income properties may take out their own building permits but any electrical, plumbing or HVAC permits must be taken out by a licensed tradesperson. Inspections will be combination where one inspector will inspect for all trades. Typically two to three inspections occur. One or two before anything gets covered and one when the project is completed. Permit applications are available on the City's website.