

## Basement Finishing & Remodeling

### PERMITS AND PLANS

Plans, specifications and permits are required for basement finishing or remodeling projects. The plans must be drawn to scale and show the work to be performed. Two (2) sets of the plans shall be submitted for a permit. Plans must include a wall section and floor plan with dimensions. Permit fees are based on the total project cost. The fee schedule is available on the Township website.

### INSPECTIONS

Building inspections are required at specific phases during construction. Typical inspections for basement finishes include plumbing ground rough (underslab plumbing), inside gas (pressure test for added gas lines), rough in (framing, plumbing, mechanical and electrical), insulation, and final inspection. For the rough-in inspection, have all framing completed and all plumbing, mechanical and electrical roughed in. An approved underwriter must inspect the electric.

### CEILING HEIGHTS

The minimum clearance requirement in all habitable rooms is 7 feet. Habitable rooms should have a minimum floor area of 70 square feet. If a room has a sloped ceiling, the required ceiling height (7 feet) shall be maintained in at least 50 percent of the required room area. No portion of a sloped ceiling shall be less than 50 inches in height. Beams, main trunk lines for HVAC and plumbing piping shall maintain a minimum height of 6 feet, 6 inches.

### SLEEPING ROOMS

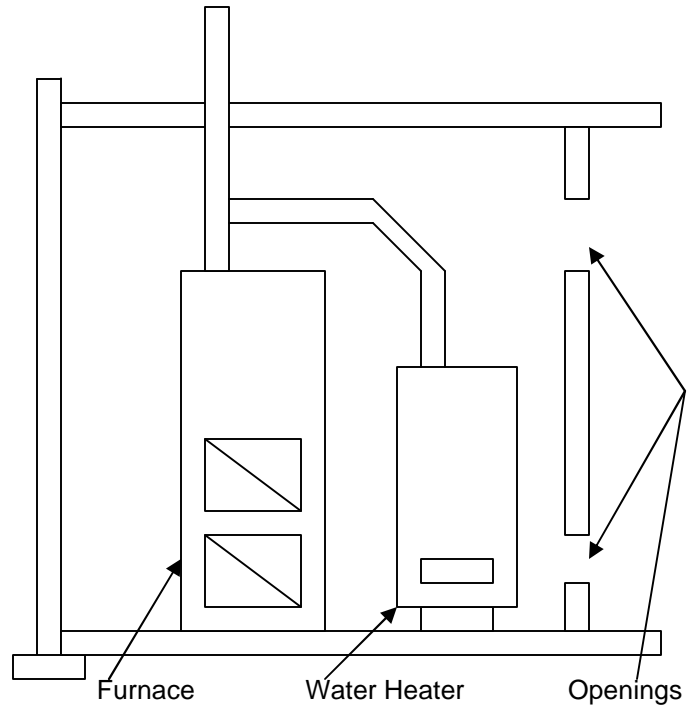
Sleeping rooms shall be provided with a secondary means of emergency egress either by a door leading directly to the exterior or by an approved window. Egress windows shall have a minimum openable area of 5 square feet, with a clear minimum width and height of 20 inches by 24 inches.

Note: Meeting the minimum height and width will not provide 5 square feet of openable area. Therefore at least one dimension will have to exceed the minimum. The sill of the window cannot be more than 44 inches above the adjacent floor surface. If a window well is used, the window well shall be a minimum of 3 feet wide and cannot exceed 44 inches in depth unless an egress ladder is provided on one side of the window well.

**MECHANICAL SYSTEMS**

Access must be maintained to unions in the ceiling or walls and to any gas valves such as valves to fireplaces on the first floor. Providing an identified access door or removable panel is acceptable. If walls are to be placed around the furnace and hot water heater areas, adequate combustion air must be maintained to the appliance for proper operation.

- Outside air ~ the opening area depends on the method used—consult a Building Inspector for specific sizing information.
- Inside air ~ inside air may also be provided from an adjoining room through openings located within 12 inches of the floor and ceiling. Each opening shall equal 1 square inch for each 1,000 BTU/hr of total input rating of all appliances and a total minimum of 100 square inches. The adjoining room must have a volume equal to at least 50 cubic feet for each 1,000 BTU/hr of aggregate input rating of the appliances.

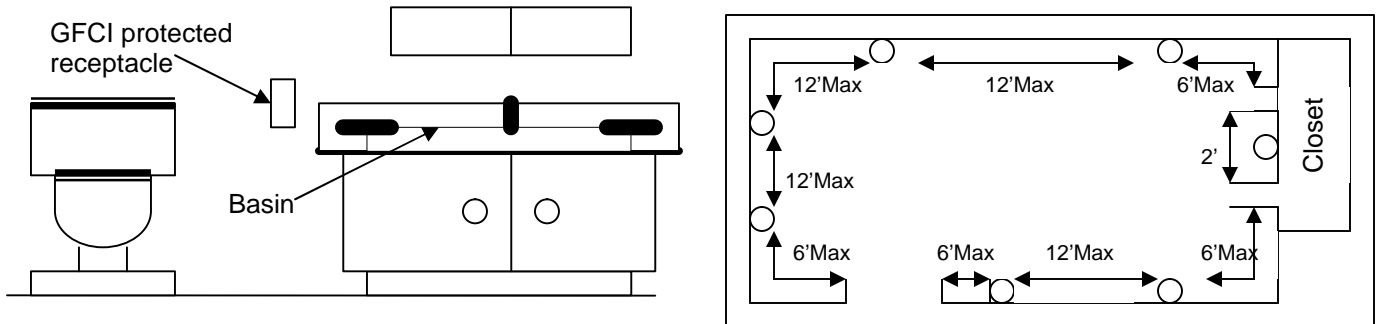


**PLUMBING**

All plumbing fixtures shall be provided with approved drains and vents. Approved water piping materials include welded or seamless copper tubing (WK, WL, WM, K, L or M), ABS plastic, polybutylene (PB), chlorinated polyvinyl chloride (CPVC), polyethylene (PE) and other materials as listed in the code. Underground building drain and vent piping may be ABS plastic, polyvinyl chloride (PVC-Type DWV) and other materials as listed in the code. Above ground sanitary drains and vent piping may be ABS plastic, polyvinyl chloride (PVC-Type DWV) and other materials as listed in the code. Approved gas piping includes copper (Type K or L), ductile iron pipe or other materials as listed in the code. All piping materials shall be labeled with the manufacturer's mark or name and the quality or grade of the products. Maintain access to plumbing drain clean-outs and floor drains.

## ELECTRICAL

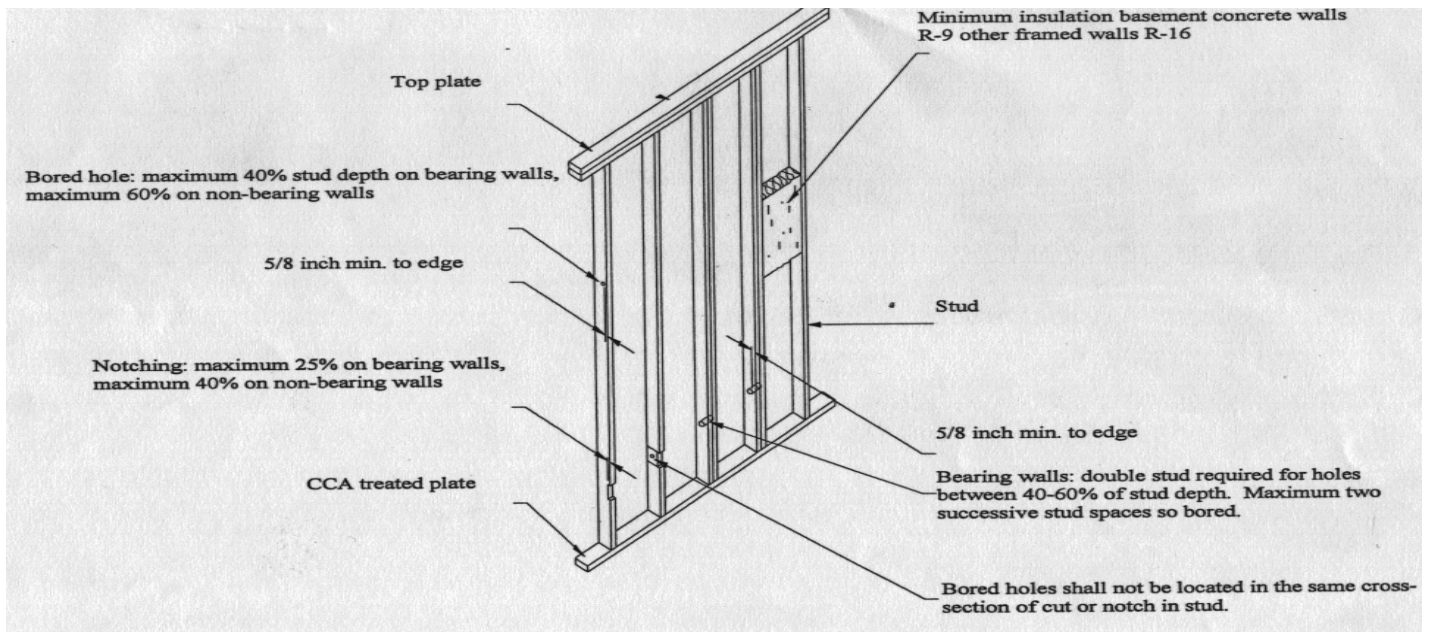
All electrical work shall comply with the 1999 National Electrical Code (NEC). All junction boxes shall remain accessible and shall not be concealed within walls or ceilings. Receptacles shall be provided for all unbroken wall spaces over 2 feet wide. Receptacles shall be located so that no point on the floor line is more than 6 feet measured horizontally from an outlet. All receptacles shall be of the grounding type. All receptacles in sleeping rooms shall be protected by arc-fault circuit interrupters. Receptacles in bathrooms or within 6 feet of sinks shall be GFCI protected. At least one wall switch controlled lighting outlet shall be provided in each finished room and hallway.



## SMOKE DETECTORS

Smoke detectors are required in each sleeping area, outside of each sleeping area and on each story of the dwelling. When basements are finished all existing alarm devices that are accessible through an attic or crawl space shall be interconnected in such a manner that the activation of one alarm will activate all alarms within the dwelling. Detectors shall receive their primary power from the house wiring and shall be provided with battery backup.

## NOTCHING AND BORED HOLE LIMITATIONS



## **FRAMING AND FINISHING**

All stud wall bottom plates in contact with the floor slab shall be CCA treated or another wood approved for ground contact. Notching and boring in studs of bearing and non-bearing walls shall not exceed the limitations noted in the diagram above. Non-bearing walls, except for the perimeter walls, shall not be constructed tight between the slab and the floor framing. An expansion joint of approximately 1 inch shall be provided to allow for possible movement of the floor slab due to expansion and contraction of the supporting soil over time. Hallways shall have a minimum clear width of 3 feet. Enclosed useable space under stairways shall be protected by ½ inch gypsum board on the enclosed side.

## **INSULATION**

Exterior walls of finished basement areas shall be insulated to provide a minimum insulation value of R-9.

## **WINDOW WELLS**

A secondary means of egress directly to the exterior is required from basements finished for living space under the following conditions:

- Each basement regardless of the use shall provide at least one secondary means of egress.

*Exception* ~ sprinklered dwellings that were built under a plan approved prior to June 25, 2002.

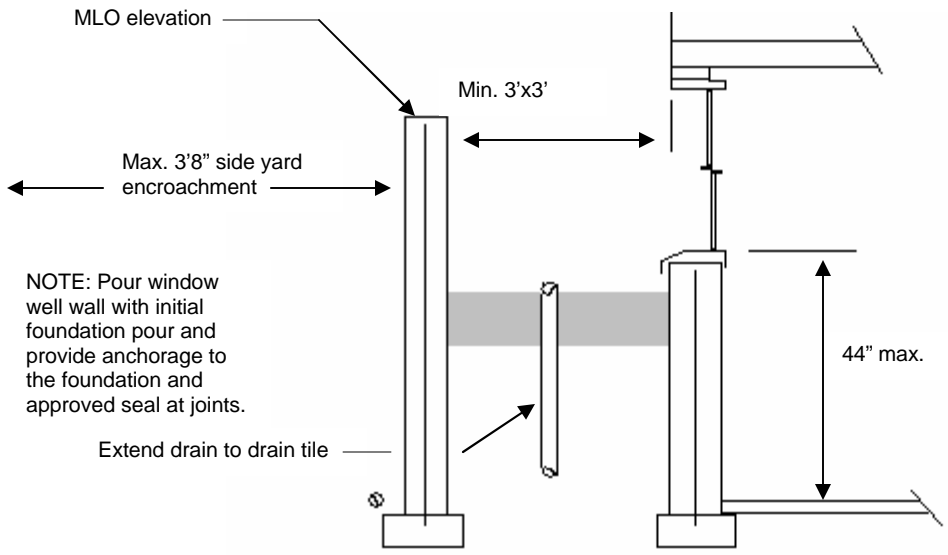
- Secondary egress is required from each sleeping room (no exceptions for sprinklered or existing dwellings).

The secondary egress may be a door or window leading directly to the exterior:

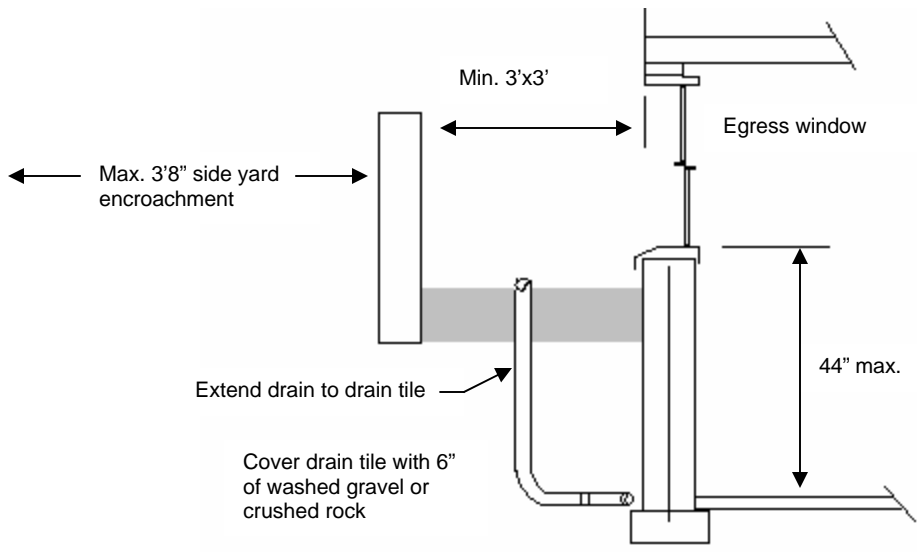
- 3' x 6'8" door with landing and steps to grade, or
- Window - minimum openable area of 5 square feet with minimum height of 24 inches and minimum width of 20 inches with the bottom of the openable portion not more than 44 inches above the floor. If a window well is provided it shall comply with the following diagrams. Standard window wells may be of any materials approved for ground contact.
- For dwellings that started construction prior to January 1, 2001, the secondary egress is required when adding on additional new basement square footage and when sleeping rooms are finished.

Basement finishes adjacent to engineered swales of the FEMA floodplain may require a water-resistant window well. Contact the zoning officer to determine if your lot must comply with these criteria.

Note: The information provided should not be considered as a complete list of code requirements. Complete information is available in the codes and ordinances adopted by the Township.



**Water Resistant Window Well/Egress Window**



**Standard Window Well/Egress Window**