



## **BASEMENT FINISH PERMIT AND BUILDING CODE REQUIREMENTS**

(REVISED 3/6/2018)

### **PERMIT SUBMITTAL CHECKLIST:**

- Signed and completed Building Permit application form.
- A separate Electrical permit is required from the City of Lakeville
- 2 Copies of plans showing proposed layout and materials. Plans shall be drawn to scale and shall include the following information:
  1. A floor plan indicating the following:
    - Location and type (block or stud) of exterior basement walls.
    - Location of all existing and proposed walls of basement with dimensions.
    - Name of each existing and proposed room.
    - Location and sizes of windows and doors.
    - Wall construction materials.
    - Location of plumbing fixtures, furnace and water heater.
    - Location of stairway, fireplaces, smoke detectors etc.
  2. A cross section plan indicating the following:
    - Proposed finished ceiling height.
    - Wall, floor and ceiling finish materials.
    - Existing and proposed insulation and vapor barrier.

### **GENERAL BUILDING CODE REQUIREMENTS:**

- Bottom plates of newly constructed walls in contact with a concrete slab shall be approved green treated lumber or separated from slab with an approved impervious moisture barrier.
- Properly sized beams and headers must be used if removing structural bearing walls or adding openings. Specify sizes of beams and headers including loading from above.
- Fireblocking shall be provided from wall cavities to soffits and drop ceilings. Soffits and walls shall be blocked every 10 feet horizontal. Fiberglass insulation may be used as fire blocking (photos 4, 5 and 6). Penetrations from walls to ceilings shall be sealed. (i.e. ducts and wires)
- Stairs with 4 or more risers shall be provided with a continuous handrail located 34 to 38 inches above the nosing. Open side(s) of stairways more than 30 inches above the floor shall be provided with a guardrail with spindles spaced to prevent the passage of a 4-3/8 inch sphere. The guardrail must be placed not less than 34 inches above the nosing of the treads.
- Every sleeping room shall be provided with an escape or rescue window having:
  - A minimum net clear openable area of not less than 5.7 square feet.
  - A minimum net clear opening height dimension of 24 inches.
  - A minimum net clear opening width dimension of 20 inches.
  - A finished sill height of not more than 44 inches above the floor.

- Smoke alarms shall be hardwired and interconnected with battery backup and installed in the following locations:
  - In each sleeping room.
  - Outside each sleeping room in the immediate vicinity of the sleeping room.
  - One per floor if no sleeping rooms are provided on that floor.

Note: Basement finishes require that the entire home be brought up to code as far as smoke alarms, smoke alarms installed in existing finished locations of the house are allowed to be battery powered and not interconnected where the only means of interconnecting the smoke detectors requires the removal of finish materials.
- Effective August 1, 2008, all existing homes shall be equipped with UL listed carbon monoxide detectors within 10 feet of every sleeping room. (IRC R315.1) Carbon monoxide detectors shall be directly plugged into an un-switched outlet, hardwired, or battery powered.
- Foam plastic (rigid) insulation shall be covered with ½-inch thick gypsum board or another approved thermal barrier material if required by insulation manufacturer.
- Enclosed and accessible space under stairs must be protected on the underside and sidewalls with ½-inch type gypsum board.
- Fiberglass insulation left exposed in exterior walls must be covered on the interior by not less than a 4-mill thick flame-retardant vapor barrier.
- If an engineered rim with built-in insulation was used on the construction of the home, do not add additional insulation to the rim area.
- Habitable rooms, hallways, and bathrooms shall have a ceiling height of not less than 7 feet. Beams, girders, ducts, and soffits shall have a ceiling height not less than 6 feet 4 inches.

### **MECHANICAL CODE REQUIREMENTS:**

- Must be able to heat all habitable spaces to a minimum 68 degrees.
- Return air ducts should not be installed in closets, kitchens (unless at least 10 feet from cooking appliances), laundry rooms, bathrooms, storage or mechanical rooms.
- Bathrooms must have an operable window, bath fan, or have a draw point air exchanger. The duct must be insulated a minimum of 3 feet inside the exterior wall (Photo 8).
- White plastic flexible duct for dryer vent or bath fan exhaust is prohibited. Metal duct (dryer) or UL listed insulated flexible duct (bath fan) is approved.
- Supply heat ducts shall be metal or listed flexible duct (Photo 9). Supply ducts in exterior walls shall be insulated with 1-1/2 foam on cold side. (Photo 7) Plastic pipe is prohibited.
- Return air ducts shall be ducted of metal or listed flexible duct. Plastic pipe is prohibited. Use of stud cavity for return air is not allowed per Energy Code. (Photo 10)
- Duct joints must be sealed and secured with minimum 3 sheet metal screws.
- Provide combustion air for the furnace and water heater supplied in the mechanical room.
- All new gas lines must be air tested to 25 pounds for 10 minutes minimum and be supported every 4 feet with straps. Label all gas lines in mechanical room.
- Provide 30” minimum clear working space in front of furnace and water heater.
- Provide minimum 1” clearance from furnace B-Vent to combustibles.

- Provide at least 6” clearance from single wall furnace and water heater vents to combustibles.
- Vent-less gas appliances or fireplaces are prohibited in Minnesota.

**PLUMBING CODE REQUIREMENTS:**

- Homes with septic system and adding a bedroom will need a compliance inspection performed by a licensed SSTS Inspector.
- All plumbing fixtures installed shall be listed to an approved 3<sup>rd</sup> party agency
- Showers built on site shall be lined and comply with Minnesota Plumbing Code 408.7
- Newly installed dishwashers shall discharge through an approved air gap.
- Ice makers and dishwashers water lines shall have shock arrestors installed.
- Newly installed floor drains shall be vented within 60 inches.
- Water closet (toilet) shall be vented with minimum 2” pipe.
- Cannot glue ABS (black) to PVC (white) pipe together. Must install listed connector.
- Clearance to water closet (toilet) must be 24” in front and 15” from the center of the water closet to each side.
- Showers and tub-shower combination control valves shall be provided and installed in accordance with ASSE 1016 or ASME A112.18.1/CSA B125.1 listing.
- Cannot use PVC for water piping. Pex water pipe may be used when installed by the homeowner or a licensed plumber certified to install Pex water piping
- Provide nail plates or stud guards to protect the plumbing pipes within 1¼ inches of the edge of studs from drywall screws and nails.
- If adding a new bathroom where no in-floor plumbing has been installed, a 5-pound air test is required for all new plumbing and inspected by the City inspector. Verify if backwater valve is required.
- Vent pipes shall not run horizontal until 6 inches above the flood level rim of the fixture served.
- Cleanouts must remain accessible.
- 1½ inch trap arm for sinks may be a maximum of 42 inches from the vent, only one 90 degree or two 45-degree bends allowed between the vent and drain.
- 2-inch trap arm for sinks may be a maximum 60 inches from the vent, only one 90-degree or two 45-degree bends allowed between the vent and drain.
- Toilet vent may be a maximum of 60 inches from the drain including the fitting and piping below the flange, 135-degree bends allowed between the vent and drain.
- Drilling through engineered lumber, allowed only per manufacturers installation instructions.
- Notching and or boring of floor joists in nominal wood joists consult with building inspector. Holes in joists shall not be within 2 inches of the top or bottom of the joist and the diameter of any such hole shall not exceed 1/3 of the depth of the joist.

- Cutting and notching studs:
  - Bearing walls max. 25% of stud width.
  - Non-bearing walls max. 40% of stud width.
- Bored holes in studs:
  - Bearing walls max. 40% of width of stud.
  - Non-bearing walls max. 60% of stud only if doubled stud.
  - No nearer than 5/8 inch from edge.

### **ELECTRICAL CODE REQUIREMENTS:**

- A separate Electrical permit is required for any new electrical work
- Electrical work shall be conducted by homeowner or licensed and bonded electrical contractor.
- Sealed electrical boxes shall be used in exterior walls where the vapor barrier is penetrated. (Photo 3)
- Please use this electrical code link for current requirements.
  - [http://www.dli.mn.gov/CCLD/PDF/eli\\_inspection\\_checklist2.pdf](http://www.dli.mn.gov/CCLD/PDF/eli_inspection_checklist2.pdf)

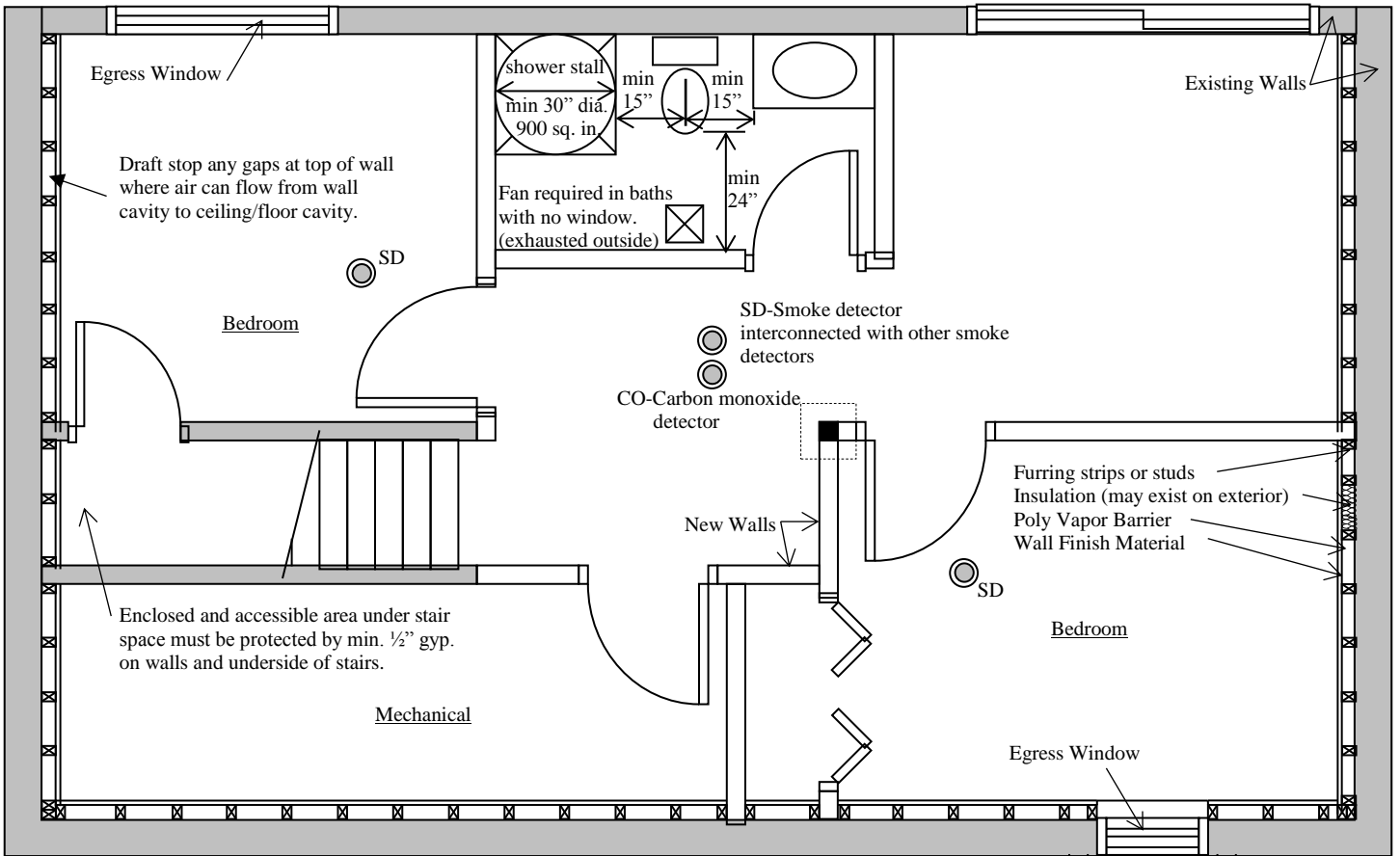
### **REQUIRED INSPECTIONS:**

1. **Electrical rough-in:** Splices completed, minimum 6 inches of conductor - not energized, boxes installed (Photos 1 & 3). Contact Electrical Inspector, Brian Grey at 507-381-1791 between the hours of 7:00am – 8:30am to schedule electrical inspection.
2. **Framing/Insulation/mechanical/plumbing:** Framing, insulation, ductwork and plumbing systems are installed but before covering and the rough-in electrical has been approved.
3. **Electrical Final:** When wiring is complete, and all fixtures installed. Contact Electrical Inspector, Brian Grey at 507-381-1791 between the hours of 7:00am – 8:30am to schedule electrical inspection.
4. **Building Final:** When complete and final electrical inspection approved.

### **GENERAL NOTES:**

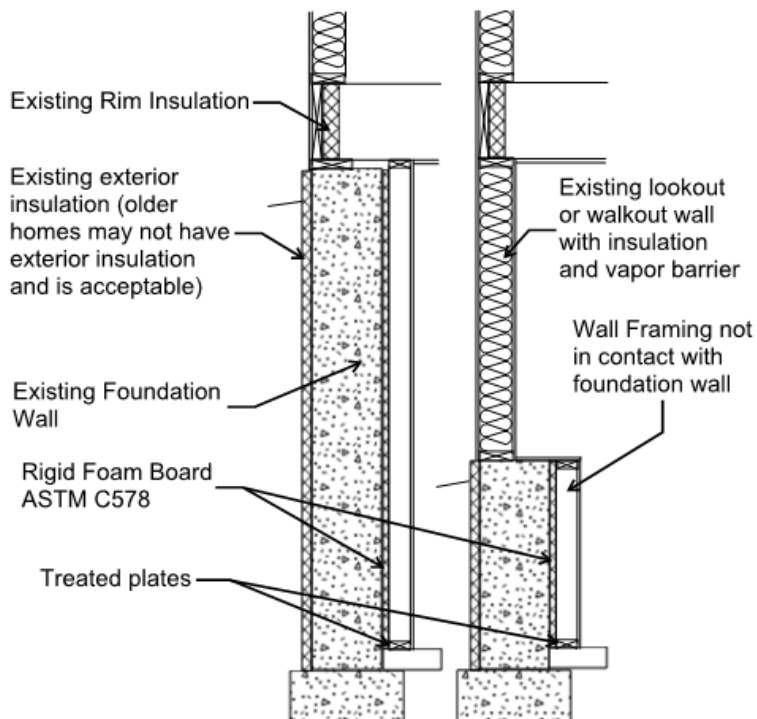
1. The stamped, approved plan shall be kept on job site until final inspection has been made. The Inspection Record Card shall remain posted in a prominent location in the construction area until the final inspection has been made.
2. Call (952) 985-4440 between 8:00 A.M. and 4:30 P.M. to arrange for an inspection other than electrical. Provide permit number when scheduling any inspections.

**ALLOW MINIMUM 24 HOURS FOR ALL INSPECTIONS!!**



**Basement Floor Plan**

3 feet x 3 feet window well with affixed ladder required when well is deeper than 44"



Insulation **may** be added to the interior following these requirements (Max R-11 total interior insulation unless spray foam):

-Spray foam insulation, closed or open cell. Framing should be 1" away from foundation wall. Open cell requires vapor retarder on warm-in-winter side of wall.

-Rigid foam board, max R-11. In contact with foundation, seams taped, sealed at floor, top, and ends of foundation wall and penetrations.

-Fiberglass Batt, may only be installed if no more than 1.5 feet of the foundation wall is above grade. R-11 max. Top and bottom wall plates must be air sealed to the foundation wall and basement floor. Vapor retarder must be installed on warm-in-winter side of wall in contact with the insulation, and sealed around perimeter. Gasketed electrical boxes must be used and the vapor barrier must be sealed around all penetrations. Framing and insulation shall not be in contact with the foundation wall.

**Cross-Section**

**Clarification Images**



1. Electrical rough-in have all boxes made up and ready with minimum 6-inch tails.



2. Fireplace vent 12 inches from grade. (see manufactures specs for other)



3. Sealed boxes required in exterior walls where insulated with fiberglass.



4. Seal all penetrations through the top sill plate on walls. (missing in photo)

Clarification Images



5. Plywood used as fire-blocking from the soffit to the wall cavities.



6. Fiberglass insulation used as fire-blocking every 10 feet horizontally in the soffit and separating soffit from wall cavity.



7. 1 1/2 rigid foam insulation used behind heat runs in exterior walls.



8. Insulated flex duct from bath fan leading to exterior, minimum 3 feet from exterior wall in required to be insulated.



9. Ducted and sealed supply air



10. Ducted and sealed return air.