



Radon Mitigation

1245 West Hwy 96 Arden Hills, MN 55112

651-792-7800

www.cityofardenhills.org

This handout is intended only as a guide and is based in part on the 2020 Minnesota State Building Code, Arden Hills City ordinances, and good building practice. While every attempt has been made to insure the correctness of this handout, no guarantees are made to its accuracy or completeness. Responsibility for compliance with applicable codes and ordinances falls on the owner or contractor. For specific questions regarding code requirements, refer to the applicable codes or contact your local Building Department.

BUILDING PERMITS

Building permits are required for most projects including decks with the following exception: freestanding decks, regardless of size, if they are not more than 30 inches above adjacent grade. Freestanding decks do not require footings that extend below the frost depth.

Other projects that are exempt from permit are:

1. One story detached accessory structures that do not exceed 120 square feet in floor area.
2. Retaining walls not over 4 feet in height, measured from the bottom of the footing to top of wall.
3. Sidewalks and driveways not part of an accessible route. New driveways require a zoning permit.
4. Decks and platforms that are not part of an accessible route, less than 30" in height above adjoining grade, and not attached to a principal structure.
5. Painting, papering, tiling, carpeting, cabinets, counter tops unless it involves moving the sink.
6. Swings and other playground equipment.
7. Patios made of concrete or pavers on grade, installing gutters, counter tops
replace cabinets with-out changing the foot print.

Please note all work still needs to comply with all City code regulations.

Building permits can be obtained from the Building Department by filling out and signing an application and submitting your building plans. Building permits are typically processed within 5 -10 business days after receiving a complete set of plans. **If your application is incomplete it will delay your project.**

GENERAL NOTES

1. The stamped "Approved" plan and the Inspection Record Card shall be made available to the inspectors during their inspections. As per MN2020 IRC, in accordance with 1300.0120 Subp. 13, the building permit shall be kept on site of the work until the completion of the project. Pursuant to Minnesota Statutes, Section 15.41, It shall be posted in a prominent location in the area of construction. If the card is not on site, the inspection may be failed as per Subp. 12
2. Separate permits are required when installing electrical wiring, heating equipment, or plumbing fixtures. Contact the Building Inspection Division for information regarding plumbing and heating, or call the contracted electrical inspector for electrical information.
3. Call the Building Inspection Division 651-792-7818 between the hours of 8:00 a.m. and 4:30 p.m. to arrange for an inspection. Please provide the permit number with your request. Call the contracted Electrical Inspector at 763-754-2983 between the house of 7:00 a.m. and 8:30 a.m. or go to or **www.tokleinspections.com** to arrange for an inspection. Please provide the permit number with your request.

PERMIT EXPIRATION

If you suspend work on your project for more than 180 days since permit issuance or your last inspection, your permit will expire. If unforeseen circumstances delay construction, contact the Building Department **before** your permit expires.

PLANS

The Building Department has a handout illustrating what needs to be included on your plans. It is very important that your plans depict exactly how your project will be built. Plans must be neat and be of a scale of at least $\frac{1}{4}'' = 1'$. **Computer generated plans from home stores are not acceptable and will be returned.** Plans are reviewed for code compliance and a copy is returned to the applicant with notes to identify required corrections. The plan review can only be as good as the information provided on the plans. PLEASE REVIEW THE PLANS WHEN THEY ARE RETURNED TO YOU SO THAT YOU WILL BE AWARE OF ANY CORRECTIONS NEEDED. The City only maintains plans for one year after completion of a residential deck. You may wish to retain a copy of your approved plans, permits, and inspection record cards for any future needs.

INSPECTIONS

1. Call 24 hours in advance or preferably 2 days in advance.
2. Have address, permit number, and type of inspection (ex. footing) ready.
3. Let the inspector know if you wish for an exact time and they will try to accommodate you.
4. Footing Inspection - Holes dug, loose material/water removed. Plans and record card on-site.
5. If work is approved, the inspector will sign the permit card and you may proceed with the next step.
6. Final Inspection - All work is complete plans and permit card on-site.
7. If corrections are noted, a correction notice will be left on the site. If a re-inspection is required it will be noted on the notice.

Please do not hesitate to call the Building Department at 651-792-7800. If necessary, we will be happy to meet with you on the site to help resolve any concerns or problems.

REQUIRED. Effective June 1, 2009, a passive sub-slab depressurization system must be provided in all new single-family dwellings, two-family dwellings, and townhouses or additions to the living areas of these uses. This applies to buildings with basements, conditioned or unconditioned crawl spaces, and slab-on-grade buildings.

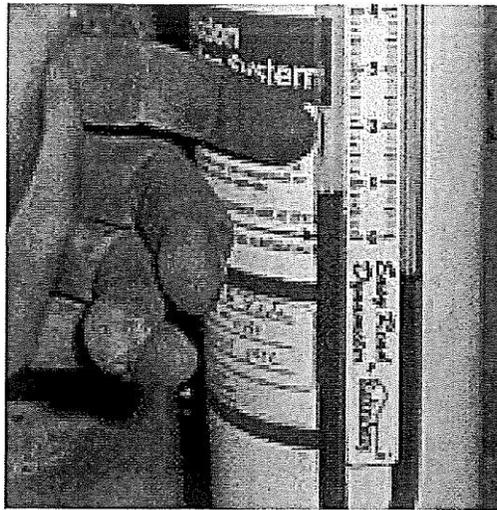
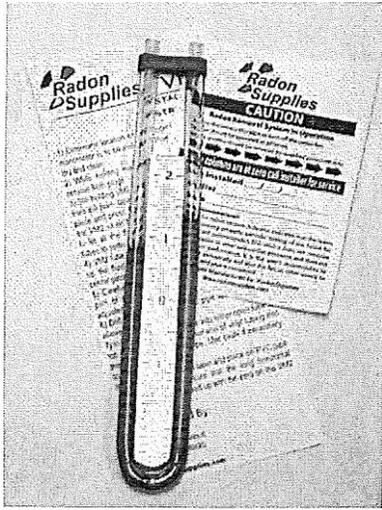
SUMMARY OF SELECTED PORTIONS

- 1) **Subfloor.** A 4-inch layer of one of the following must be placed under any basement or crawl space floor slab or assembly:
 - a) A layer of clean aggregate consisting of material that will pass through a 2-inch sieve and be retained by a 1/4-inch sieve or
 - b) A layer of sand overlain by a layer or strips of geotextile drainage matting.
- 2) **Soil-gas-retarder.** A minimum 6-mil or 3-mil cross-laminated polyethylene sheeting shall be placed on top of the sand or aggregate base or the soil in the case of a crawl space. The sheeting must:
 - a) Cover the entire floor area with separate sections lapped at least 12 inches, fit closely around any pipe, wire, or penetration of the material, and have any punctures or tears sealed.
 - b) The sheeting is **not** required to be sealed at laps or where placed on footings.
- 3) **Floor openings.** Openings around bathtubs, showers, water closets, pipes, wires or other objects that penetrate concrete slabs or other floor assemblies shall be filled with a polyurethane caulk or equivalent sealant.
- 4) **Joints.** All control joints, isolation joints, construction joints, and any other joints in concrete slabs or between slabs and foundation walls must be sealed with a polyurethane caulk or other elastomeric sealant.

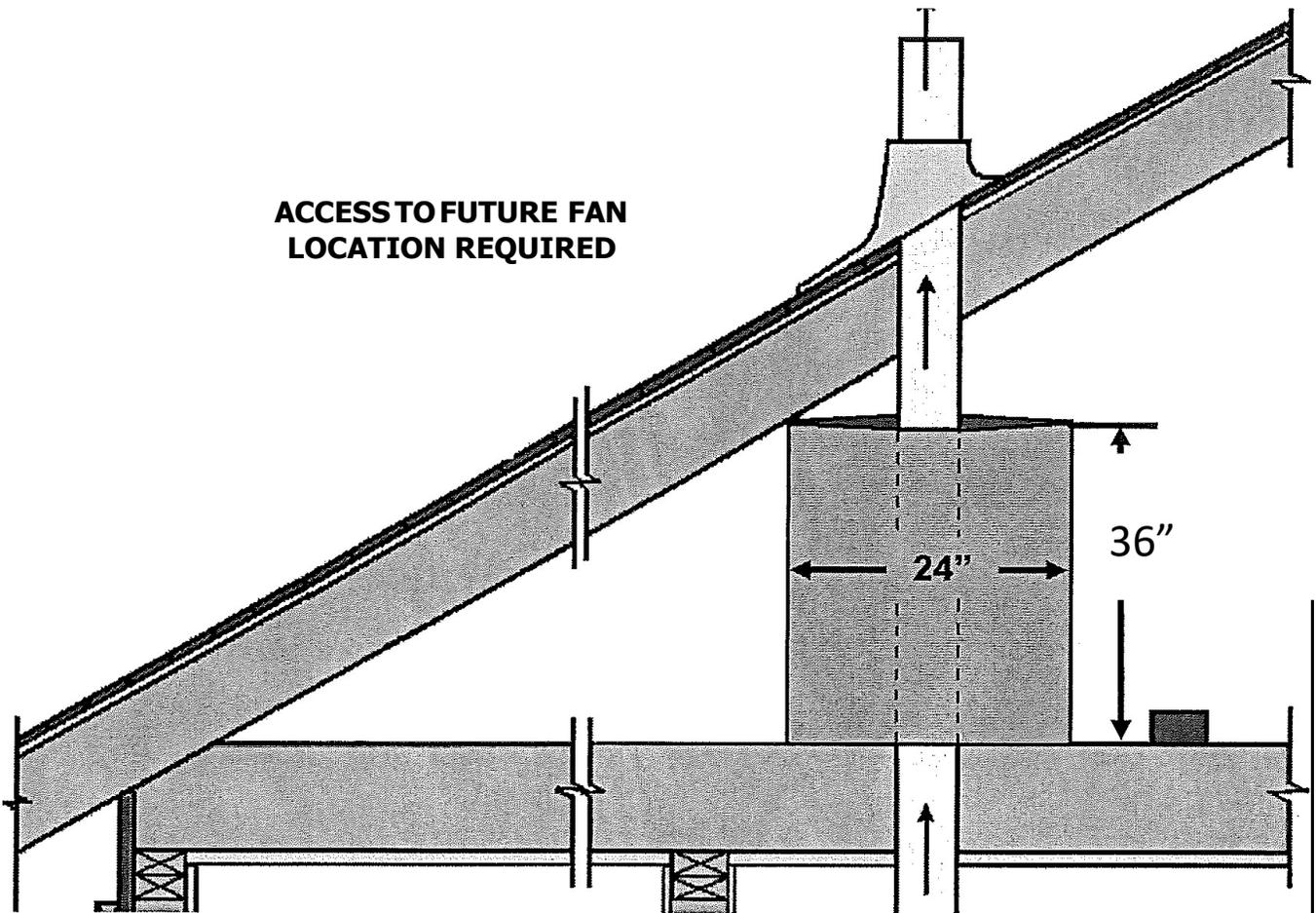
- 5) **Sumps.** Sumps open to soil or serving *interior* drain tile loops must have a gasketed or sealed lid.
- 6) **Masonry foundation walls.** A continuous course of solid masonry, one course of solid grouted masonry, or a solid concrete beam shall be provided at or above finished ground level. Brick ledges shall be sealed.
- 7) **Waterproofing / damp proofing.** Exterior surfaces of foundation walls must be waterproofed/damp proofed in accordance with IRC Section R406.
- 8) **Ducts.** Ducts passing through or beneath a slab shall be seamless. Ductwork in crawl spaces shall have seams and joints sealed.
- 9) **Vent pipe.** A 3- or 4- inch tee shall be inserted beneath the soil-gas-retarder. Ten feet of 3- or 4-inch diameter perforated pipe must be connected to **each** side of the tee. The horizontal pipe must be embedded in the sub-slab permeable material when a slab or floor assembly exists. Instead of a tee, the pipe may be inserted directly into an interior perimeter drain tile loop or through a sealed sump cover where the sump is exposed to the sub-slab aggregate or connected to it through a drainage system. A 3- or 4-inch vertical pipe shall extend from the tee, the drain tile loop, or the sump through the building terminating at least 12 inches above the roof at least 10 feet from any window or other opening into conditioned spaces that is less than 2 feet below the exhaust point and at least 10 feet from any window or opening into an adjoining or adjacent building.
- 10) **Monitoring system.** A monitoring system is required on all **active** systems.
- 11) **Divided basements.** When sub-slab aggregate is separated by footings or other barriers, each area must have an individual vent pipe. Individual vents may be connected into a single terminal vent.
- 12) **Multi-level basements/crawl spaces.** When multilevel basements or combination Basement /crawl spaces occur, each type of foundation must have a separate vent pipe.
- 13) **Vent drainage.** All vents must be pitched to provide positive drainage.
- 14) **Access.** Where vent pipes pass through attics, a working space not less than 24 inches in diameter and 36 inches high must be provided.
- 15) **Identification.** Each vent pipe must be identified with a label reading "Radon Reduction System" on each floor and in attics even if located in a concealed space.
- 16) **Power source.** An electrical circuit terminated in an approved box must be installed in the attic adjacent the vent pipe.
- 17) **Active systems.** If an active system is installed, the vent pipe may be routed through an unconditioned space **within the building or garage, provided the vent pipe is insulated to a minimum of R-4.**

The following illustrations provide a summary of the radon regulations. For the full text of the rules, see the Minnesota Energy Code.



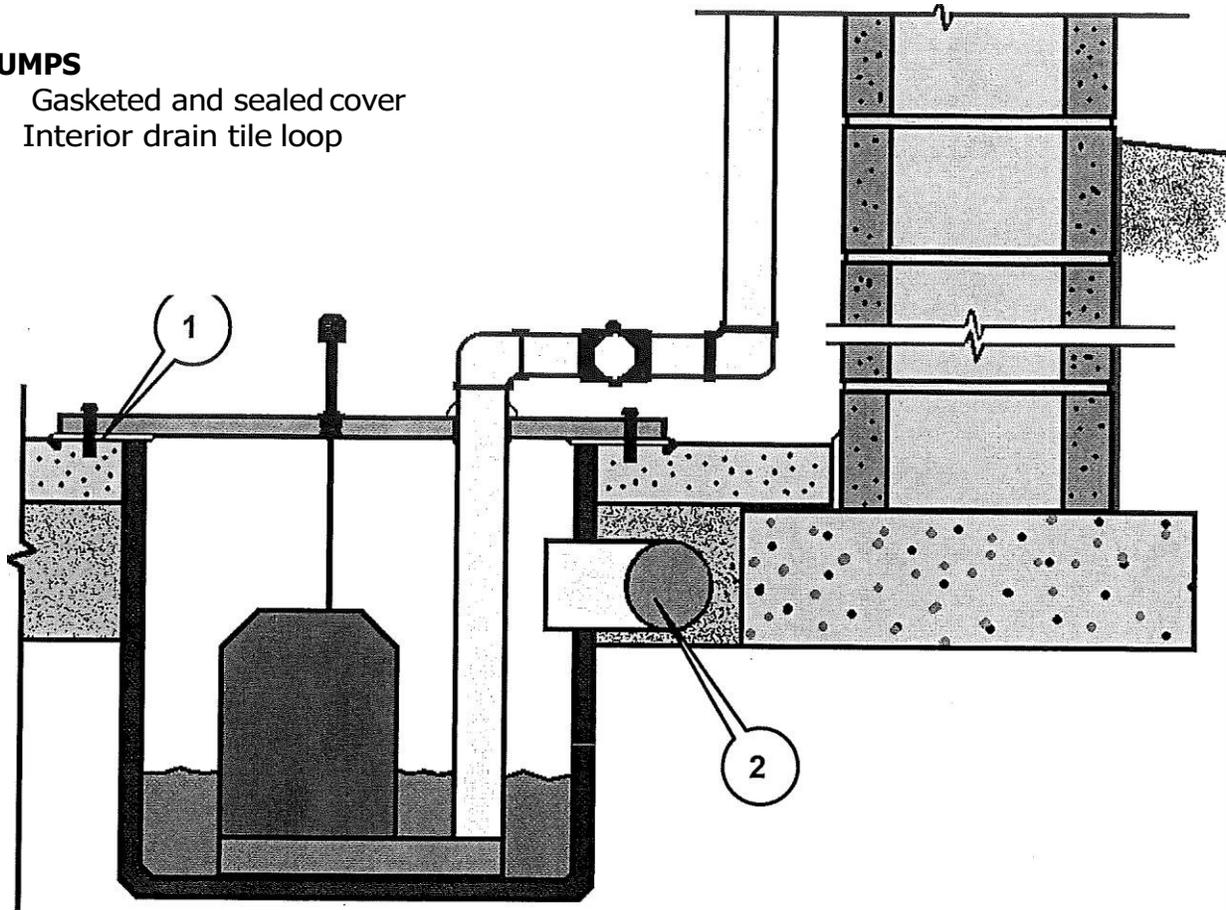


ACCESS TO FUTURE FAN LOCATION REQUIRED



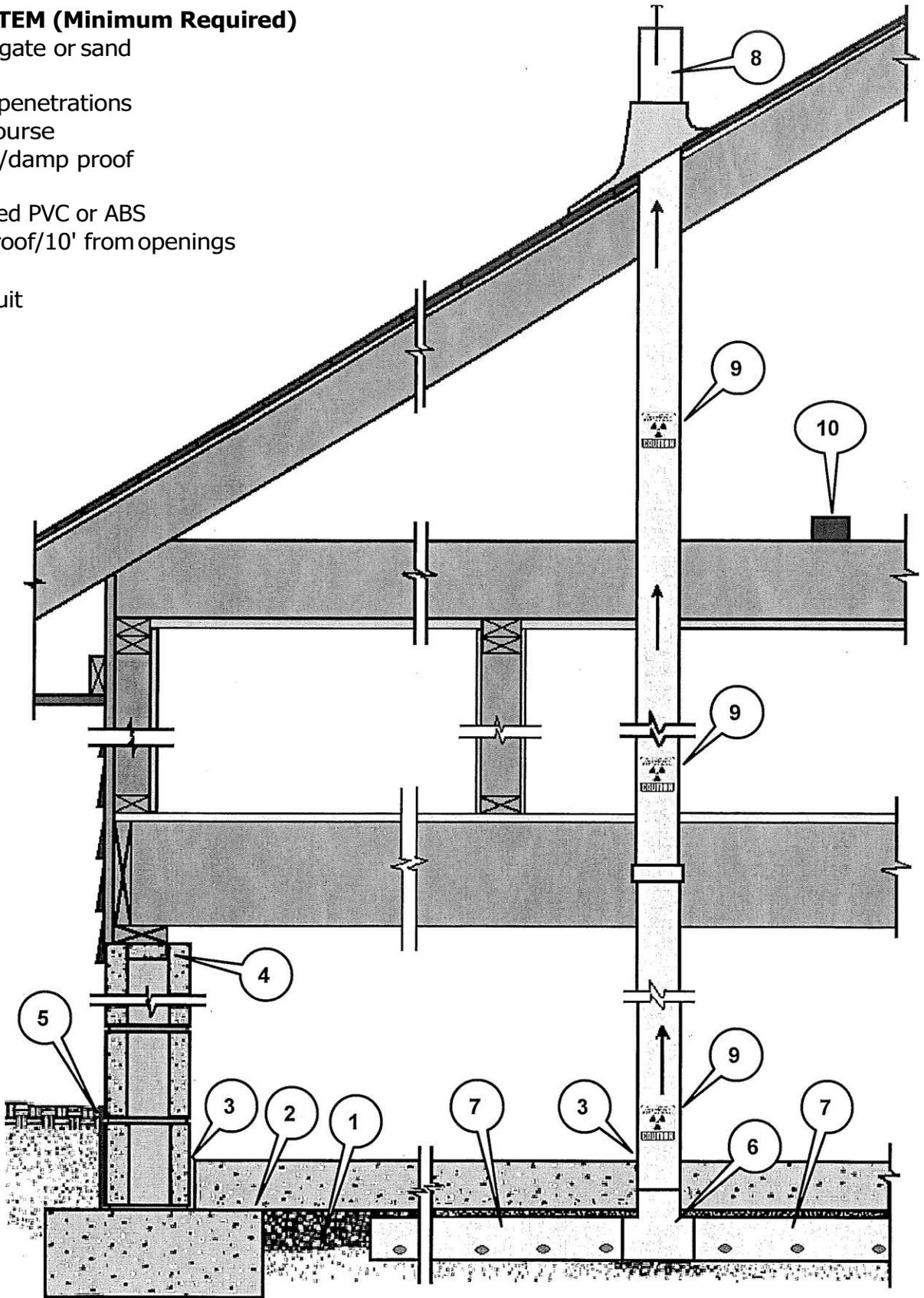
SUMPS

1. Gasketed and sealed cover
2. Interior drain tile loop



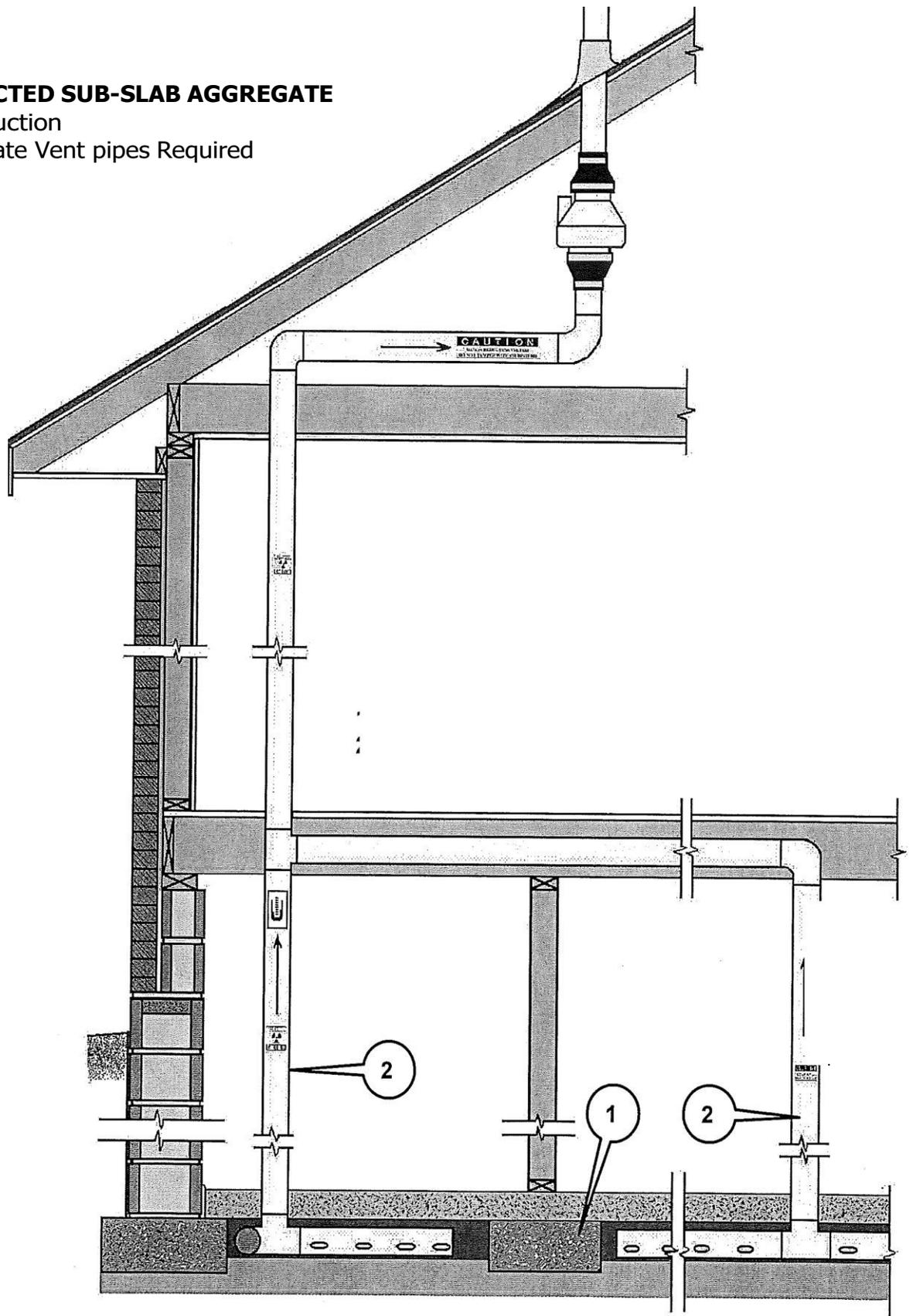
PASSIVE SYSTEM (Minimum Required)

1. 4" of aggregate or sand
2. 6-mil poly
3. Seal joints/penetrations
4. Solid top course
5. Waterproof/damp proof
6. 3-4" T
7. 10' perforated PVC or ABS
8. 12" above roof/10' from openings
9. Pipe ID
10. Future circuit



OBSTRUCTED SUB-SLAB AGGREGATE

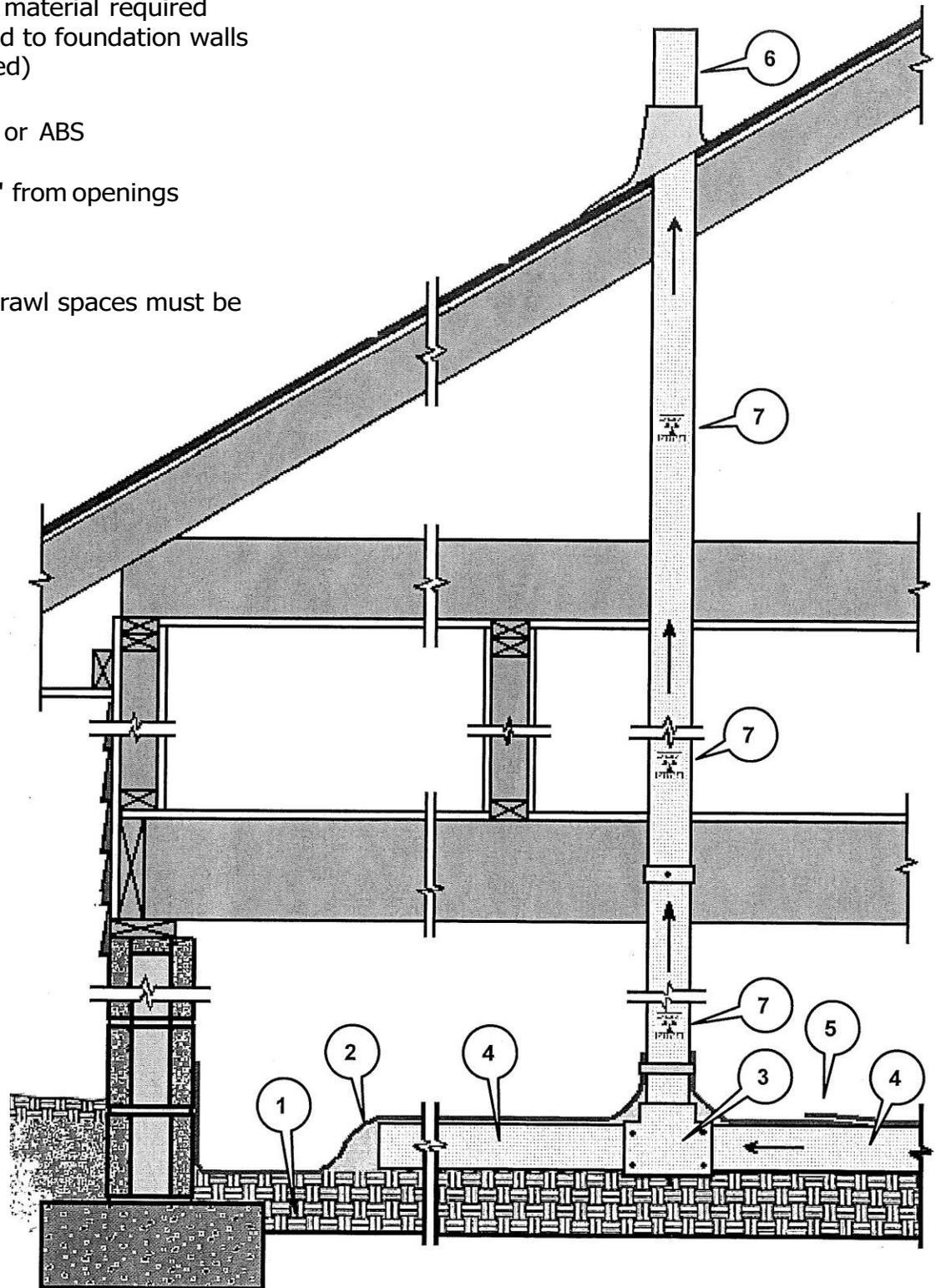
1. Obstruction
2. Separate Vent pipes Required



CONDITIONED CRAWL SPACES

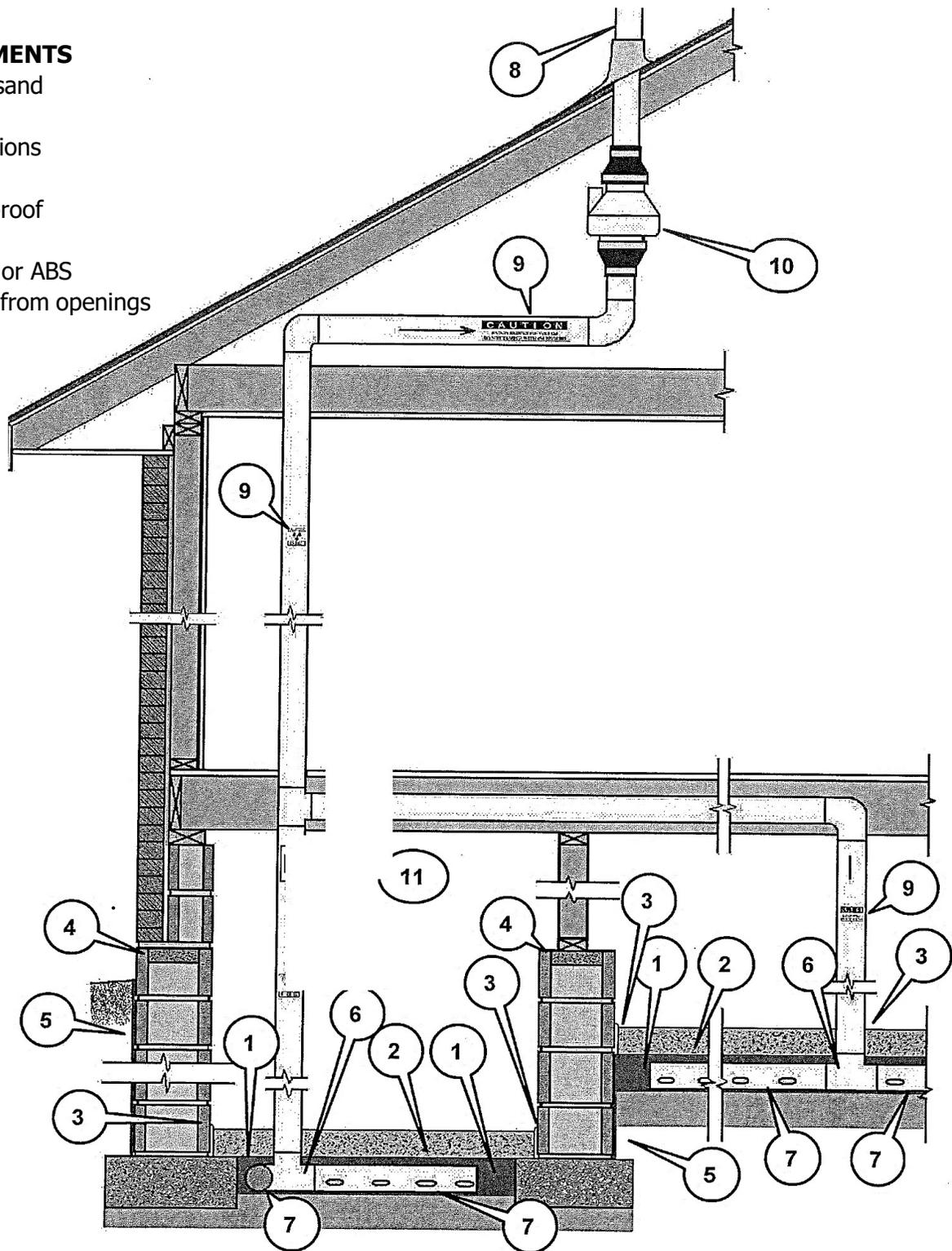
1. No gas permeable material required
2. 6 mil poly extended to foundation walls (no sealant required)
3. 3-4" T
4. 10' perforated PVC or ABS
5. 12" laps
6. 12" above roof/10' from openings
7. Pipe ID

Air handling units in crawl spaces must be sealed



MULTI-LEVEL BASEMENTS

1. 4" of aggregate or sand
2. 6-mil poly
3. Seal joints/penetrations
4. Solid top course
5. Waterproof/damp proof
6. 3-4" T
7. 10' perforated PVC or ABS
8. 12" above roof/10' from openings
9. Pipe ID
10. Approved fan
11. Monitoring system



NOTE: For specific code requirements, please contact the Building Inspection Division. Questions regarding design and cost should be referred to a professional builder or architect.

Building Inspector: 651-792-7818

This handout is written as guide to common questions and problems.

It is not intended nor shall it be considered a complete set of requirements.