Building Code Requirements – Single-Family Additions

Building Inspections | City of Eden Prairie | 8080 Mitchell Road | Office: 952-949-8342

Building permit requirements

A. **Upload a current Certificate of Survey** drawn to scale, indicating the lot dimensions, the location and dimensions of existing structure(s) and the location and dimensions of the proposed structure.

   Indicate the setbacks from property lines and wetlands/buffers (if applicable).

B. **Upload a copy** of exterior envelope calculations which comply with the State Energy Code. Questions regarding compliance should be directed to an architect, a professional builder, or your lumber supplier.

C. **Plans drawn to scale** — Submitted plans must have sufficient detail to build the addition from them. A plan view, section view and elevations are required; all drawn to scale. Indicate all materials and sizes being used.

D. **Building permit fee** is based on a published fee schedule available at the Building Inspection Division.

Other permits

Separate plumbing, heating and electrical permits are required for each type of work being done.

Setback requirements

Minimum required setback distances from the front side and rear lot lines may vary according to location. They are set by the Zoning Ordinance and approved plans. Contact the Community Development Department for this information. When requesting this information, please provide the legal description of the property.

Setback distances are measured from property lines, not from streets, curbs, sidewalks, fences, hedges, trees or poles. Property irons are located underground, and they establish property lines.

NOTE: Locating the property corner irons (legal markers) is the responsibility of the property owner; irons must be visible when the footing inspection is requested. Setbacks are measured from the legal property line, wetlands or buffer (if applicable).

Framing requirements

A. **Base plates** on concrete shall be of approved treated wood.

B. **Studs** Minimum 2 X 4 studs, not more than 10 feet in length. Maximum 24 inches O.C. spacing. If only one top plate is used, trusses or rafters must bear over studs. (1-inch tolerance allowed)

C. **Rafters and roof sheathing** for sloped roofs shall be designed for a 35 lb./sq.ft. live load.

   Collar ties are installed at a maximum of 4 feet within the top third of the rafters.

   Trusses **must** be engineered by an approved manufacturer. Truss specs must be on-site.

D. **Allowable header spans** for openings in outside bearing walls on one-story frame buildings, assuming a 20-feet wide addition and a 2-feet overhang. Spans are both Spruce-Pine-Fir and Hem-Fir.

E. **Allowable rafter spans** for roofs with a pitch of 3-12 or greater; assumes a “dead load” of 7 pounds per square foot (PSF) and a deflection limit of 1/180 (span in inches divided by 180).

Spruce-Pine-Fir (SPF) #2 or better

Rafter size	Ceiling type					
	Flat	Vaulted	Flat	Vaulted	Flat	Vaulted
	12” O.C.	12” O.C.	16” O.C.	16” O.C.	24” O.C.	24” O.C.
2 X 6	12’-8”	11’-9”	11’-0”	10’-2”	9’-0”	8’-4”
2 X 8	16’-1”	14’-10”	13’-11”	12’-11”	11’-5”	10’-6”
2 X 10	19’-8”	18’-2”	17’-0”	15’-9”	13’-11”	12’-10”
2 X 12	22’-9”	21’-1”	19’-9”	18’-3”	16’-1”	14’-11”

Hem-Fir #2 or better

Rafter size	Ceiling type					
	Flat	Vaulted	Flat	Vaulted	Flat	Vaulted
	12" O.C	12" O.C.	16" O.C.	16" O.C.	24" O.C.	24" O.C.
2 X 6	12'-6"	11'-5"	10'-10"	10'-0"	8'-10"	8'-2"
2 X 8	15'-10	14'-8"	13'-9"	12'-8"	11'-3"	10'-4"
2 X 10	19'-4"	17'-11"	16'-9"	15'-6"	13'-8"	12'-8"
2 X 12	22'-6"	20'-9"	19'-5"	18'-0"	15'-11"	14'-8"

F. Allowable ceiling joist spans

Assumes limited attic storage (20PSF) and drywall ceilings.

Joist size	Spruce-Pine-Fir #2		Hem-Fir #2	
	16" O.C.	24" O.C.	16" O.C.	24" O.C.
2 X 4	8'-7"	7'-2"	8'-4"	7'-1"
2 X 6	12'-10"	10'-6"	12'-8"	10'-4"
2 X 8	16'-3"	13'-3"	16'-0"	13'-1"
2 X 10	19'-10"	16'-3"	19'-7"	16'-0"

G. Allowable floor joist spans

Joist size	Spruce-Pine-Fir #2			Hem-Fir #2		
	12" O.C.	16" O.C.	24" O.C.	12" O.C.	16" O.C.	24" O.C.
2 x 6	10'-3"	9'-4"	8'-1"	10'-0"	9'-1"	7'-11"
2 X 8	13'-6"	12'-3"	10'-3"	13'-2"	12'-0"	10'-2"
2 X 10	17'-3"	15'-5"	12'-7"	16'-10'	15'-2"	12'-5"
2 X 12	20'-7"	17'-10"	14'-7"	20'-4"	17'-7"	14'-4"

Landings

In each single- family home there must be a minimum of one, 3-feet x 6-feet, 8-inches, side-hinged door leading directly to the exterior. This exit door must have a landing/ floor on each side. The floor/landing on the interior may be no more than 1-1/2 inches below the threshold. The exterior landing must be, at a minimum, the width of the door and a minimum 36 inches in depth from the door/ wall plane. This landing may be up to 7-3/4 inches lower than the top of the door threshold if the primary door does not swing out.

Landings for exterior doors other than defined exit

If no door other than a storm/screen door swings over the exterior landing, that landing may be up to 7-3/4 inches below the top of the threshold.

The code allows an exterior stair, when less than 30 inches high, to butt up to the opening without a landing if no door swings over it. This would include sliding patio doors. The 30-inches measurement is taken from the interior floor height to the exterior finished grade or surface the bottom of the stair rests on.

Light, ventilation and ceiling height

All habitable rooms shall have a window area equal to at least 8% of the floor area. The minimum openable area to the outdoors shall be 4% of the floor area being ventilated.

Note: Some exceptions apply.

Minimum ceiling height for habitable spaces is 7 feet, with exceptions for beams and sloped ceilings.

Additions over garages

Fire separation is required. The underside of floor joists and/or truss members require 5/8-inch type X gypsum. Walls supporting the joists and/or truss ends and the wall separating the house from garage require ½-inch gypsum.

Energy code requirements

Additions and alterations to homes built after April 15, 2000, must include methods, materials and mechanical equipment to meet the provisions of the current *Minnesota Energy Code.*

Unvented crawl spaces

The ground must be covered with a vapor retarder. The joints must be overlapped a minimum of 6 inches and be sealed/taped. The edges must extend up the foundation wall a minimum 6 inches and be attached and sealed to the wall.

One of the following mechanical systems must be installed:

1. A **continuously** operated mechanical exhaust at a rate equal to 1 cfm for each 50- square-feet and an air pathway to the common area, e.g. a duct or transfer grille.
2. Conditioned air supply sized to deliver at a rate equal to 1 cfm for each 50-square-feet. It must include a return air pathway to the common area such as a duct or transfer grill.

Attic ventilation

Attics above heated spaces must be provided with ventilation equivalent to 1/300th of the attic area, equally distributed between soffit vents and high roof or ridge vents.

Valley flashing for asphalt shingles

A minimum 26-guage by 24-inches-wide galvanized steel flashing is required. For open or closed valleys (no metal) the shingle manufacturer's instructions must be followed.

Shingles

Shall not be installed on roofs with a slope of less than 2:12. Refer to the *"Asphalt Roofing Shingles"* information sheet for special requirements for roofs with low pitch from 2:12 to 4:12.

Roof starter material

A manufactured ice barrier protection membrane shall be installed to a point no less than 24 inches inside the exterior wall line. The product must start on the fascia board and be installed per the manufacturer's instructions. Detached accessory structures that contain no conditioned floor area are exempt.

Sleeping rooms

Every sleeping room shall have an exterior door or an emergency escape window meeting all these requirements:

A. Sill height – not more than 44 inches above the floor.

B. Openable area – net clear of 5.7-square-feet.

Exception: An emergency escape window at grade floor may have a net clear opening of 5-square-feet.

C. Opening height – not less than 24 inches.

D. Opening width – not less than 20 inches.

If this emergency escape window is below exterior grade, then a window well is required. The well must provide a minimum 9-square-feet net clear opening with the window open and a minimum 36 X 36-inch area from the open window to the well. (See *"Egress Escape Windows" information sheet.)*

Basement emergency escape

Basements and every sleeping room must have at least one emergency and rescue opening. When adding a foundation that is 7 feet high or greater and no emergency opening currently exits in the basement, one must be added in either the existing basement or the new one. (This applies even if there are no sleeping rooms or the basement is unfinished).

Foam plastic insulation

Shall be an approved type or covered with ½-inch gypsum board or equivalent material. Exposed foam plastic insulation is not allowed in any room, including crawl spaces and attics. (Exception: spray foam in the rim joist area, not exceeding 5-1/2 inches thick and having a flame spread of 25 or less and smoke development 450 or less.)

Water resistive sheathing paper

A minimum of one layer of No. 15 asphalt felt or other approved water-resistive material shall be applied over sheathing of all exterior walls. Lap a minimum of 2 inches horizontally and 6 inches vertically at joints.

Note: Not required for detached accessory buildings, or when specifically prohibited by sheathing and/or siding manufacturer.

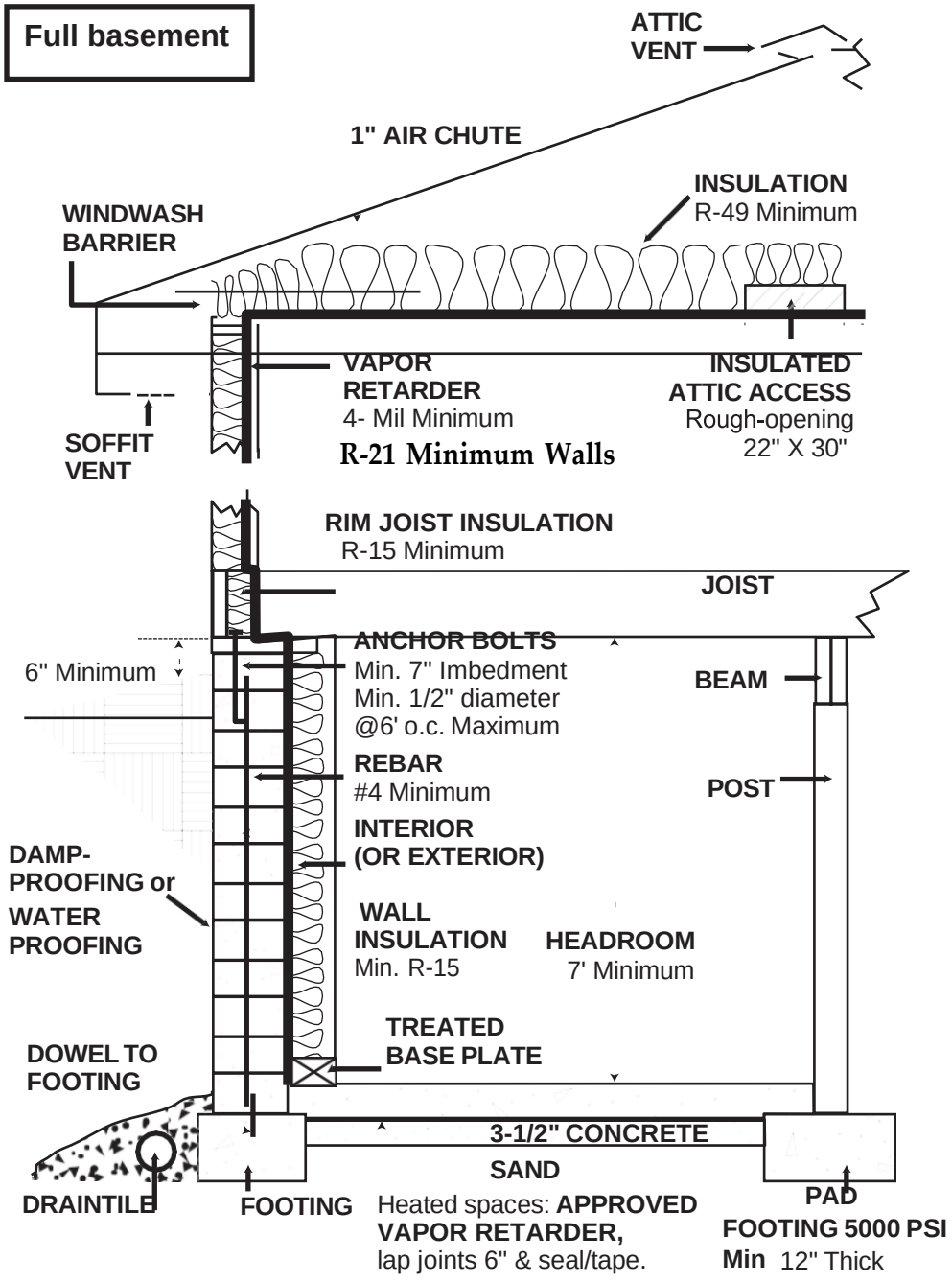
Flashing (corrosion-resistive)

Required over all exterior exposed openings. Flashing must be designed to shed water away from the building wall. When installing vinyl siding manufacturer's installation instructions must be followed.

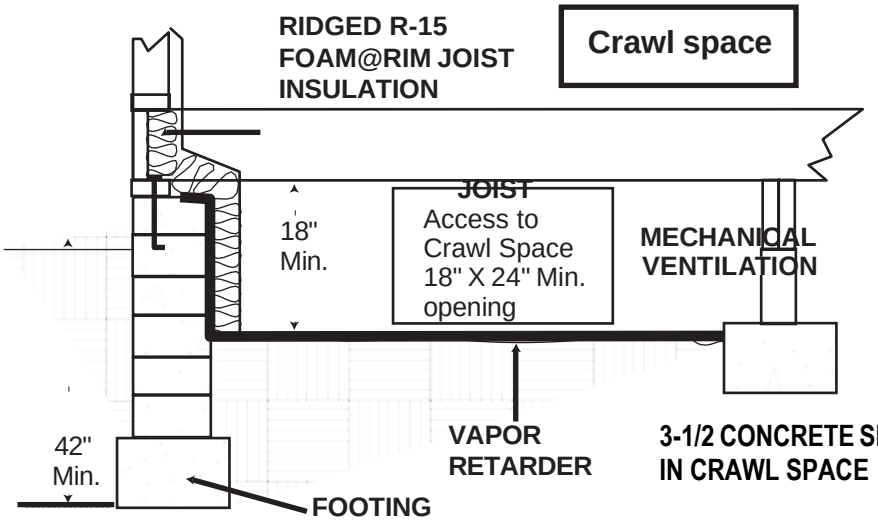
Fire/smoke alarm system

When alterations, repairs or additions requiring a permit occur, or when one or more sleeping rooms are added or created in existing homes, the entire building shall be provided with smoke detectors as required for new homes. This includes the installation of a smoke detector in the basement of houses having a stairway which opens from the basement into the dwelling. Smoke detectors may be battery-operated when installed in existing buildings unless walls and ceilings are open and new wiring is being installed. In that case, smoke detectors must be "hard-wired"– interconnected without a disconnect switch other than a breaker.

Full basement



Crawl space



Inspections needed

- **Footing:** When footing is excavated and formed or slab is formed, and sand cushion and reinforcement are in place but prior to the placement of any concrete.
- **Poured foundation walls:** Prior to pour, all reinforcing must be in place and secured by time of requested inspection.
- **Rough-in:** For any plumbing, heating or electrical work involved.
- **Lateral Bracing:** (when required on City-approved plans and inspection record card).
- **Framing:** When all framing is complete, all mechanicals installed, but before insulating.

Note: Rough-in inspections for all trades must be approved and signed off on the inspection card before a framing inspection will be performed.

- **Insulation:** When all wall insulation is in place and ceiling and wall vapor barriers are in place, but prior to the installation of any wall or ceiling finish materials.
- **Final:** When all work is complete and before occupancy.

Note: Final inspections for all trades must be approved and signed off on the inspection card before a building final inspection will be performed.

When calling for an inspection have permit number(s) available.

Questions?
Need an inspection?

Contact:
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Eden Prairie, MN 55344
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