



## CITY OF NORTH MANKATO

### BASEMENT FINISH

- ❖ Building permits are required to finish an area in your basement, which includes such things as constructing, moving, and/or altering a wall; installing a wall surface on existing exposed studs; installing a ceiling surface; or changing the use of space such as converting a recreation room to a bedroom. **Additional permits are required if any electrical or plumbing work is being performed.**
- ❖ ***If a licensed contractor is hired to complete the project, have them take out any and all required permits!***
- ❖ Along with the completed Building Permit Application, submit:
  - Two copies of plans (drawn to scale) showing the proposed design including:
    - Proposed floor plan design, including dimensions
    - Existing floor plan overview
    - A description of the plumbing fixtures to be used
    - The location of plumbing fixtures
    - A description of any changes to existing heating, ventilation and air conditioning
    - The location of any changes to heating and ventilation
    - Labeling of all rooms
    - Additional information may be required by the plan reviewer

### PROJECT CHECKLIST

- ❖ Minimum ceiling height shall not be less than 6'-4", including beams, girders, ducts, or other obstructions. (R305.2.1)
- ❖ Bathrooms shall have a minimum ceiling height of 6'-4" at the center of the front clearance area for water closets, bidets, or sinks. (R305.2.1.1)
- ❖ Habitable rooms shall have a floor area of not less than 70 square feet. Habitable rooms shall not be less than 7 feet in any horizontal dimension. (R304.2 & 304.3)
- ❖ A shower or tub equipped with a showerhead shall have a minimum ceiling height of 6'-4" above a minimum area 30" by 30" at the wall where the showerhead is placed. The ceiling may have slopes or soffits that do not infringe on the height required for the plumbing fixture. (R305.2.1.1)
- ❖ An egress window is required in every bedroom and in basements when habitable space is first added or habitable space is expanded. If an egress window is installed in a basement bedroom, an additional egress window is not required in the balance of the basement unless there are additional bedrooms. (See *Emergency Escape & Rescue Opening* handout for more information) (R310)
- ❖ Sill/sole plates shall be preservative-treated and adequately secured to the floor. (R317.1)
- ❖ Smoke alarms and carbon monoxide alarms shall be installed and operational. Smoke alarms shall be hard-wired and interconnected when interior wall or ceiling finishes are removed exposing the structure. (See attached smoke and carbon monoxide alarm handout) (R314)
- ❖ If a gas fireplace is installed, a gas line air test inspection is required. The test shall consist of 25 psi for a minimum of 30-minutes. If a CSST gas line is installed to the fireplace, it shall be bonded to the electrical service grounding electrode system with a jumper not smaller than 6 AWG copper wire. (Fuel Gas Code 310)
- ❖ When the underside of the stairway is enclosed and accessible by means of a door, a minimum of ½" gypsum board is required on all walls and ceiling of the enclosed area. (R302.7)

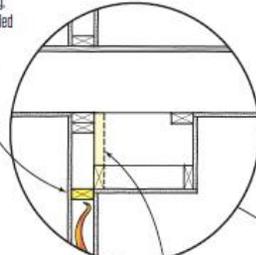
- ❖ Framing installed at the perimeter of the basement shall not be in direct contact with the foundation wall.
- ❖ Fireblocking is required at the following locations: (refer to attached diagram)
  - 1) In concealed spaces of stud walls and partitions, including spaces and parallel rows of studs or staggered studs, as follows:
    - 1.1. Vertically at the ceiling and floor levels.
    - 1.2. Horizontally at intervals not exceeding 10 feet.
  - 2) At all interconnections between concealed vertical and horizontal spaces such as occur at soffits, drop ceilings and cove ceilings.
  - 3) At openings around vents, pipes, ducts, cables and wires at ceiling and floor level, with an approved material to resist the free passage of flame and products of combustion. The material filling this annular space shall not be required to meet the ASTM E 136 requirements.
    - Fireblocking materials shall consist of the following:
      - 1. Two-inch nominal lumber.
      - 2. Two thicknesses of 1-inch nominal lumber with broken lap joints.
      - 3. One thickness of 23/32-inch wood structural panels with joints backed by 23/32-inch wood structural panels.
      - 4. One thickness of 3/4-inch particleboard with joints backed by 3/4-inch particleboard.
      - 5. One-half-inch gypsum board.
      - 6. One-quarter-inch cement-based millboard.
      - 7. Batts or blankets of mineral wool or glass fiber or other approved materials installed in such a manner as to be securely retained in place.
      - 8. Cellulose insulation installed as tested for the specific application.
- ❖ Heat supply and return registers shall be installed at each area to maintain a minimum room temperature of 68°F.
- ❖ An exhaust fan shall be installed in a bathroom with a tub or shower. The exhaust fan shall be exhausted to the exterior of the dwelling. Rule of thumb: fan should produce 1 cubic foot per minute per 1 square foot of area to be exhausted. (i.e.-Bathroom dimension is 10' x 10'=100 square feet, the exhaust fan shall be capable of exhausting approximately 100 cubic feet per minute.)
- ❖ Drilling and notching of framing members shall be in accordance with the Minnesota State Residential Building Code. (See *Drilling and Notching of Framing Members* handout for more information) (R502.8, 602.6)
- ❖ Toilets shall be set no closer than 15" from the centerline of the toilet to a sidewall or obstruction. (MN PLG. Code 402.5)
- ❖ Shower compartments shall have a finished interior of 1024 square inches and be capable of encompassing a 30 inch circle, regardless of shape. (MN PLG. Code 408.6)

## Typical Fire-Blocking Locations

### Soffits

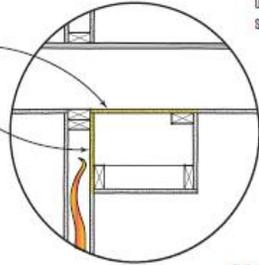
Without fire blocking, a soffit provides a path for fire to spread from a wall cavity to the joist bays above. Installing a single piece of material across the face of the studs is often faster than using individual blocks.

2x fire blocking, typically installed in stud bays next to soffits



Optional 2x lumber or approved structural sheathing

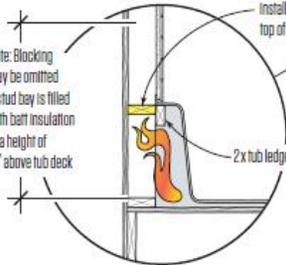
If drywall has been installed on the wall before the soffit is built, no additional fire blocking is needed



### Tub Deck

Fire blocking is required in the stud bays around a drop-in tub.

Note: Blocking may be omitted if stud bay is filled with batt insulation to a height of 15" above tub deck

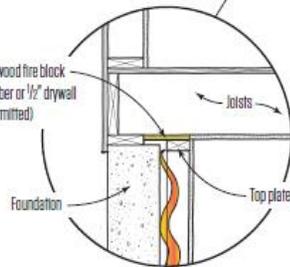


2x fire blocking installed in line with top of tub deck

### Perimeter Basement Walls

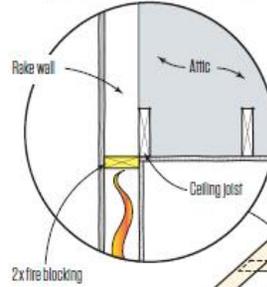
A space behind a 2x4 perimeter basement wall must be separated from the joist bays above.

3/4" plywood fire block (2x lumber or 1/2" drywall also permitted)



### Balloon-Framed Rakes

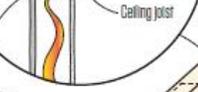
Full-height rake walls need fire blocks to separate the stud bays from the attic space above.



Rake wall

Attic

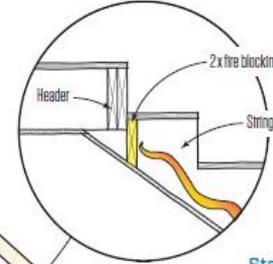
2x fire blocking



2x fire blocking

### Stair Stringers

The space between stringers must be separated from the upper-story floor-joist bays.



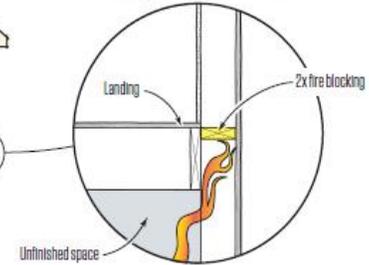
Header

2x fire blocking

Stringer

### Stairway Landings

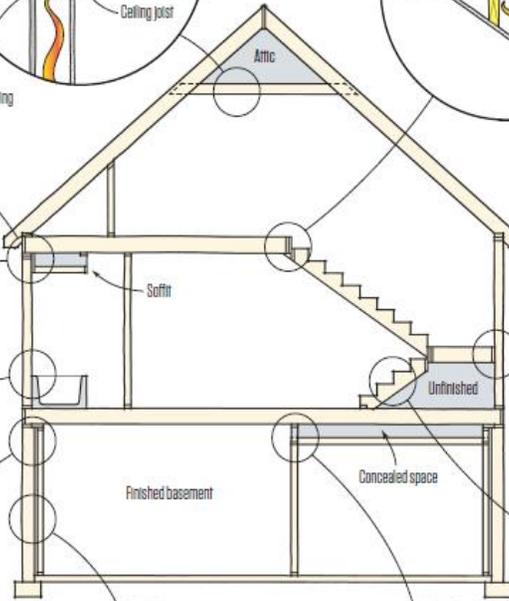
If the area underneath the landing is unfinished, the wall bays must be blocked.



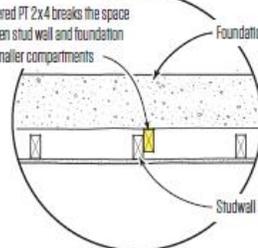
Landing

2x fire blocking

Unfinished space



A sistered PT 2x4 breaks the space between stud wall and foundation into smaller compartments

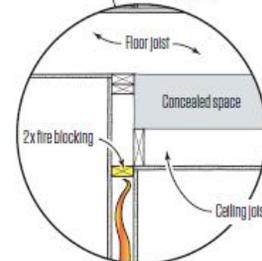


Foundation

Studwall

### Concealed Spaces in Walls

When a wall is not drywalled or sheathed on both sides (which is typical of furred-out basement walls and double stud walls) there must be a full-height fire block every 10 feet horizontally.



Floor joist

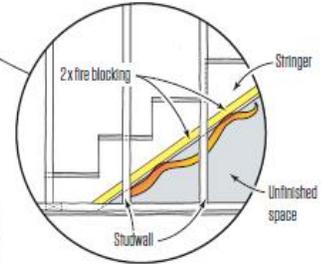
Concealed space

2x fire blocking

Ceiling joist

### Dropped Ceilings

Dropped ceilings can be blocked in the same way as soffits.



Stringer

2x fire blocking

Unfinished space

### Stair Stringers

If the area below the stair is unfinished, fire blocks are required in the stud bays alongside the stringer. If the area beneath is finished with minimum 1/2" drywall, this blocking is typically not required.

# NOTICE

At the time of final inspection of any window installation, the City of North Mankato is required to inspect the permitted property for the proper installation of smoke alarms as required MN Statute 299F.362 and MN State Building Code chapter 1309.0314.3.1, and carbon monoxide detectors as required by MN Statute 299F.51 and MN State Building Code chapter 1309.0315. If the safety devices are not present, properly installed, and functional in the home, we will not be able to close the permit.

Thank you in advance for your cooperation!

Dave Knudson  
Building Official

## **Requirements for Smoke Alarms & Carbon Monoxide Detectors**

Smoke alarms are required in each sleeping room, outside each separate sleeping area in the immediate vicinity of the bedrooms, and on each additional story of the dwelling.

Carbon monoxide detectors are to be located outside and within 10'-0" of each separate sleeping area or bedroom. Alarms shall be installed on each level containing sleeping areas or bedrooms.

## **SMOKE ALARMS**

**Flat Ceilings**-When mounted on a flat ceiling, alarms shall be located NO closer than 4" from adjoining wall surface.

**Peaked Ceilings**-When mounted on a peak ceiling, alarms shall be located within 36" horizontally of the peak, but NOT closer than 4" vertically to the peak.

**Sloped Ceilings**-When mounted on sloped ceilings having a rise greater than 1'-8" horizontally shall be located within 36" of high side of the ceiling, but NOT closer than 4" from adjoining wall surface.

**Wall Mounting**-When mounted on wall, alarms shall be located NOT closer than 4" from adjoining ceiling surface & NOT further than 12" from adjoining ceiling surface.

Alarms shall NOT be installed within 36" of a door to a kitchen or a bathroom containing a shower or tub.

Alarms shall NOT be installed within 36" of supply registers of forced air heating or cooling systems and outside of the direct airflow from those registers.

Alarms shall NOT be installed within 36" from the tip of the blade of a ceiling fan.

If basement does NOT have any sleeping areas or bedrooms, alarms shall be located on the basement ceiling near the entry to the stairs leading up from the basement.

Alarms shall be mounted on an inside wall or well insulated ceiling below an attic space.

## **CARBON MONOXIDE DETECTORS**

Detectors shall be installed outside and NOT more than 10'-0" from each separate sleeping area or bedroom and on each level containing sleeping areas or bedrooms.

Detectors can be mounted high or low on a wall or on a ceiling, refer to the manufacturer's installation requirements.