

BUILDING SAFETY DEPARTMENT

Basement Finishing Guide



This handout is intended only as a guide and is based in part on the 2020 Minnesota State Building Code, Monticello City ordinances, and good building practice. While every attempt has been made to ensure 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 the City of Monticello Department of Building Safety at (763)-295-3060.

Permits and Plans

Building permits are required to finish or change the use of the space in a basement (such as converting a recreation room to a bedroom) and for some repairs.

Plans are required to be submitted to receive a permit for basement finishing or change of use. Plans must be neat scale drawings that include the following:

- Floor plan
- Window sizes and locations
- Cross sections
- Notes to explain the nature and extent of the project

Permit processing time is an estimated 5 business days. Please make sure that the application is complete with detailed plans and submitted well in advance of the work start date. **If the application is incomplete or missing details, the permit processing time will be extended.**

Electrical work requires a separate permit with the Minnesota Department of Labor and Industry's Electrical Division. The electrical permit application and payment process are available online only. All electrical inspections will be performed by a local state electrical inspector.

Inspections

Inspections are required of all work. An inspection record card is given with the building permit. The inspection record card states the required inspections.

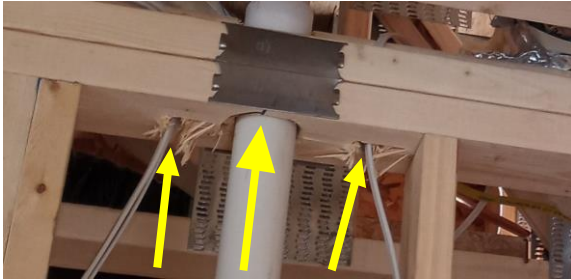
Inspections are done by appointment. To schedule an inspection, call the Building Safety Department at (763) 295-3060. Please have the property address and permit number ready. Inspection appointments require a 24 hour notice.

General Information

- Bedrooms must be at least 70 square feet in area and not less than 7 feet in any horizontal dimension.
- Non-bearing wood framed walls may be 2x4 studs at 16 or 24 inches on center. Walls must have a bottom plate and at least a single top plate. Plates in contact with concrete floors must be decay resistant.
- Heat in all habitable rooms sustainable at 68 degrees 3-feet off the floor, 2-feet from exterior walls (R303.9).
- Stairway illumination is required.
- Fireplaces and auxiliary heat sources may be installed in basements but must be installed in strict accordance with the manufacturer's written instructions. A separate permit is required.
- Basements and each sleeping room require an emergency escape and rescue opening that opens directly into a public way or to a yard or court that opens to a public way (R310).
- Window wells require at least 9 square feet of net clear area with a minimum horizontal projection and width of 36 inches. An attached ladder or steps is required when the vertical depth below grade exceeds 44 inches. The ladder or rungs shall be at least 12 inches wide, project at least 3 inches from the wall and spaced not more than 18 inches apart (R310.2). A window well drainage system is required when not in well drained soils.
- Do not remove any existing partitions unless they are determined to not be load bearing partitions. If any portion of a load bearing partition is to be removed or altered, a header or beam must be installed to transfer the load to a footing; detailed information of the load bearing wall changes must be included with the permit application. Prior approval of your permit is required.
- Foam plastic insulation must be covered with 1/2" gypsum drywall or other approved material (R316.4).
- Rooms served by a forced air system must have supply and return air, except for closets and baths (R403.5).
- Drilling and notching of open web trusses, laminated veneer lumber (LVL) beams, is not permitted without an approved design from the manufacturer or a structural engineer.
- Drilling and notching of I-joists is permitted in accordance with the manufacturer's written installation instructions. Further information on cutting, notching, and boring framing members is provided at the end of this guide and should be used as a guide for repairs.
- Bathroom ventilation is required. A 10-20-30-60-minute countdown timer switch for fan operation will help reduce excess humidity (R303.3).

Insulation, Fire Blocking and Draft Stopping

- Fire blocking shall be provided to cut off both vertical and horizontal concealed draft openings. In concealed spaces of stud walls and partitions, fire blocking shall be vertically at the ceiling and floor levels and horizontally at intervals not exceeding 10 feet (R302.11).



Examples of fire blocking needing to be added between the wall and ceiling.

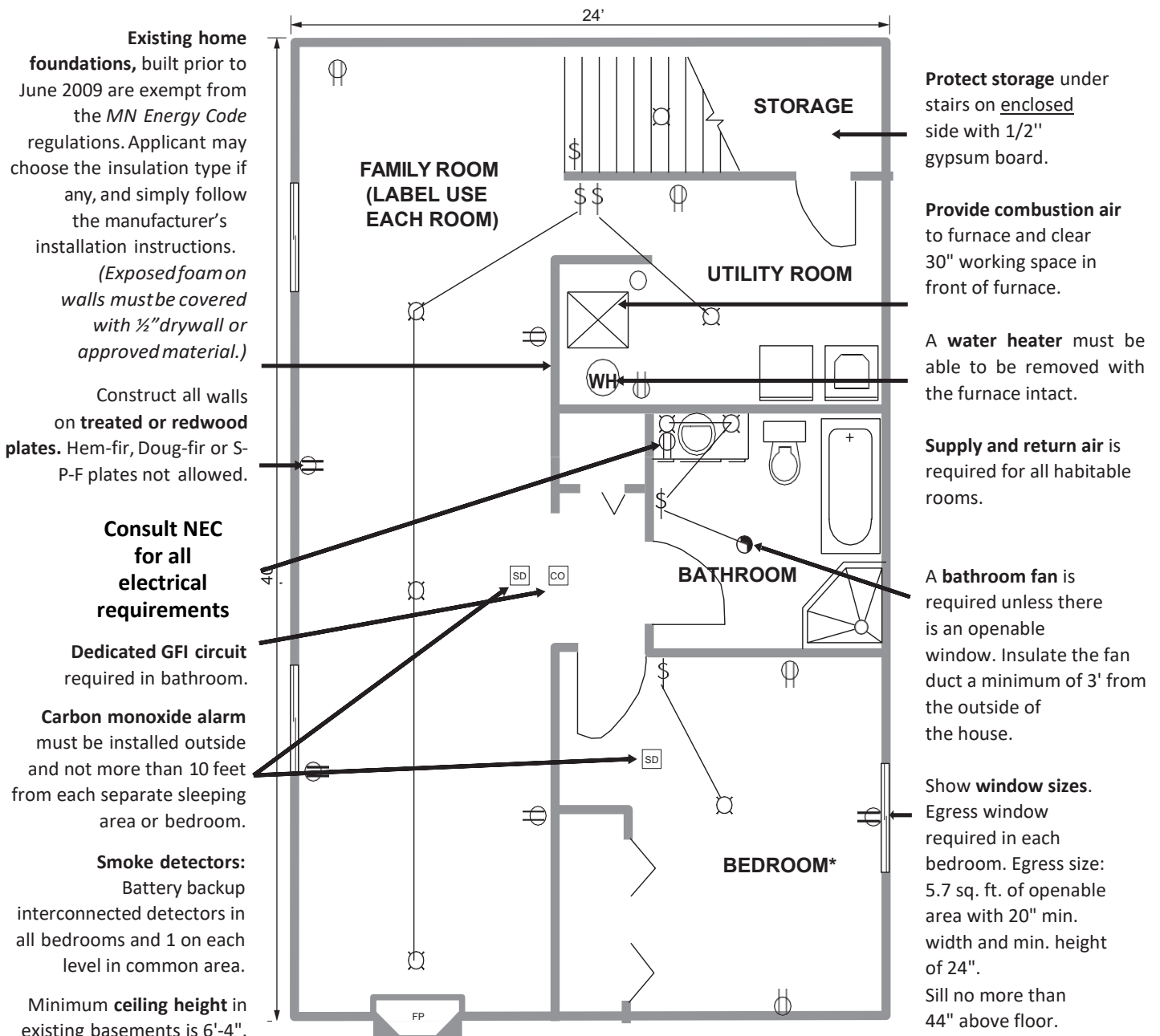


Example of draft stopping of floor truss.



Example of fire blocking of furred out wall and ceiling using batts of insulation.

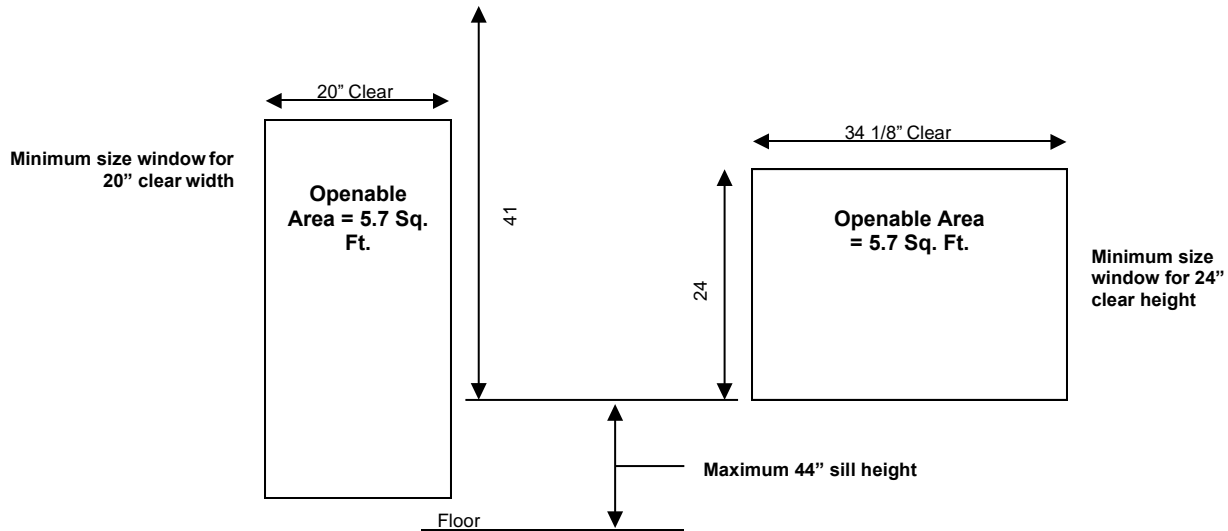
Plan Details



Window wells that are less than 32" from the basement floor to bottom of well may require additional exterior insulation ensure frost protection of the footing.

Note: Electrical panels are NOT allowed in bathrooms or clothes closets.

Emergency Escape and Rescue Openings (IRC R310)



The Minnesota State Building Code (MSBC 2020) requires that basements with habitable space and every sleeping room below the fourth story shall have at least one (1) operable window or exterior door opening approved for emergency escape and rescue.

- MSBC Section R310.1.4 requires rescue openings to be operational from the inside of the room without the use of keys or tools.
- Section R310.1 requires that glazed openings open directly onto a street or public alley, or a yard or court located on the same lot as the building.
- The net clear openable area shall be no less than 5.7 square feet.
 - **Exception for grade floor openings and window wells:** Grade floor openings shall have a minimum net clear opening of 5 square feet. Grade floor openings are defined as a window or other opening located such that the sill height of the opening is not more than 44 inches above or below the finished ground level adjacent to the opening.
- The net clear openable height dimension shall be a minimum of 24 inches. The net clear openable width dimension shall be a minimum of 20 inches. **Note:** Using both minimum figures will not obtain the required 5.7 square feet. The chart below summarizes the minimum window dimensions that will achieve a 5.7 square foot opening.
- The finished sill height shall not be more than 44 inches above the floor.

Minimum Width / Height Requirements for Emergency Escape and Rescue Windows (inches)

Width	20	20.5	21	21.5	22	22.5	23	23.5	24	24.5	25	25.5	26	26.5	27
Height	41	40	39.1	38.2	37.3	36.5	35.7	34.9	34.2	33.5	32.8	32.2	31.6	31	30.4
Width	27.5	28	28.5	29	29.5	30	30.5	31	31.5	32	32.5	33	33.5	34	34.2
Height	29.8	29.3	28.8	28.3	27.8	27.4	26.9	26.5	26.1	25.7	25.3	24.9	24.5	24.1	24

Cutting, Notching and Boring

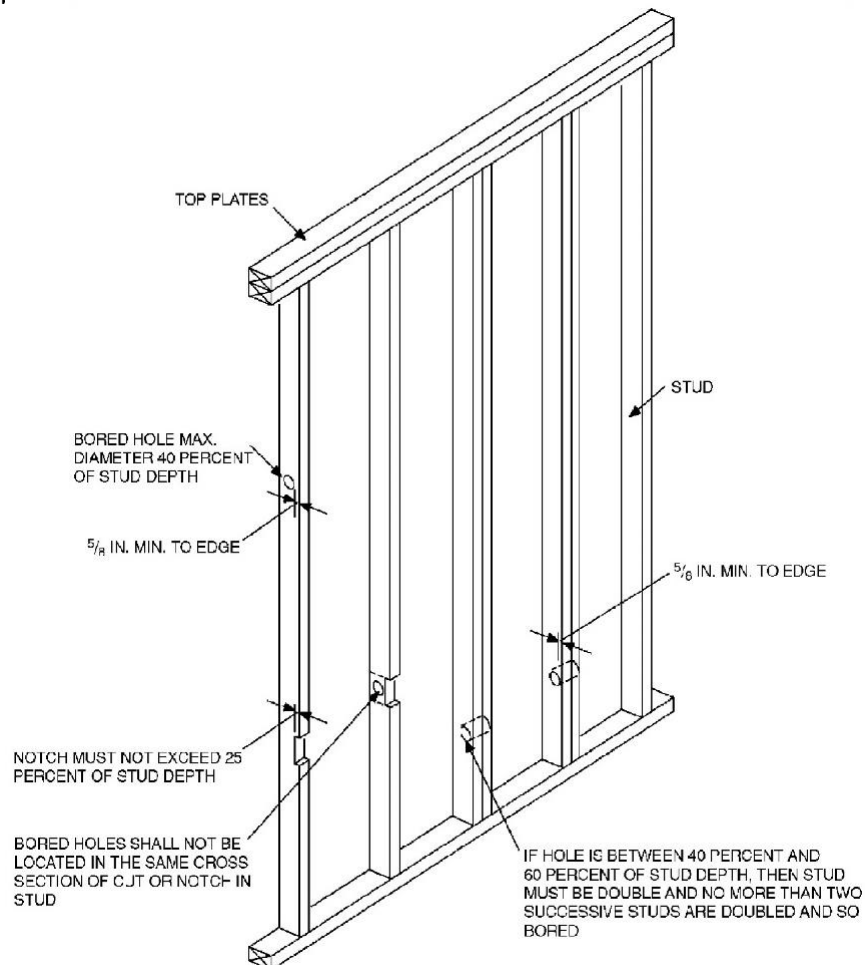
The purpose of this handout is to provide the details for notching and boring wood studs, joists, and plates. For cutting, notching and boring trusses and manufactured lumber, such as laminated veneer lumber, the manufacturer's installation instructions should be consulted.

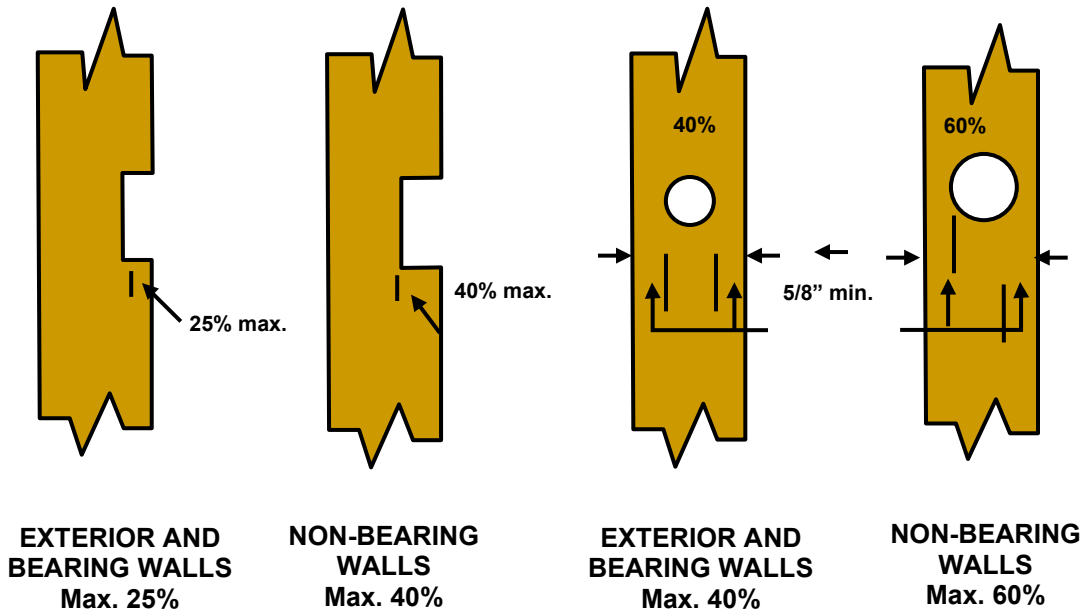
Notching and Boring Wood Studs²

	Maximum Diameter of Hole	Distance from Hole to Edge of Stud	Location	Maximum Depth of Cut or Notch
Bearing/Exterior Studs¹	40% of Stud Width	5/8" Minimum	Not same section as cut or notch	25% of Stud Width
Interior Nonbearing Studs	60% of Stud Width	5/8" Minimum	Not same section as cut or notch	40% of Stud Width

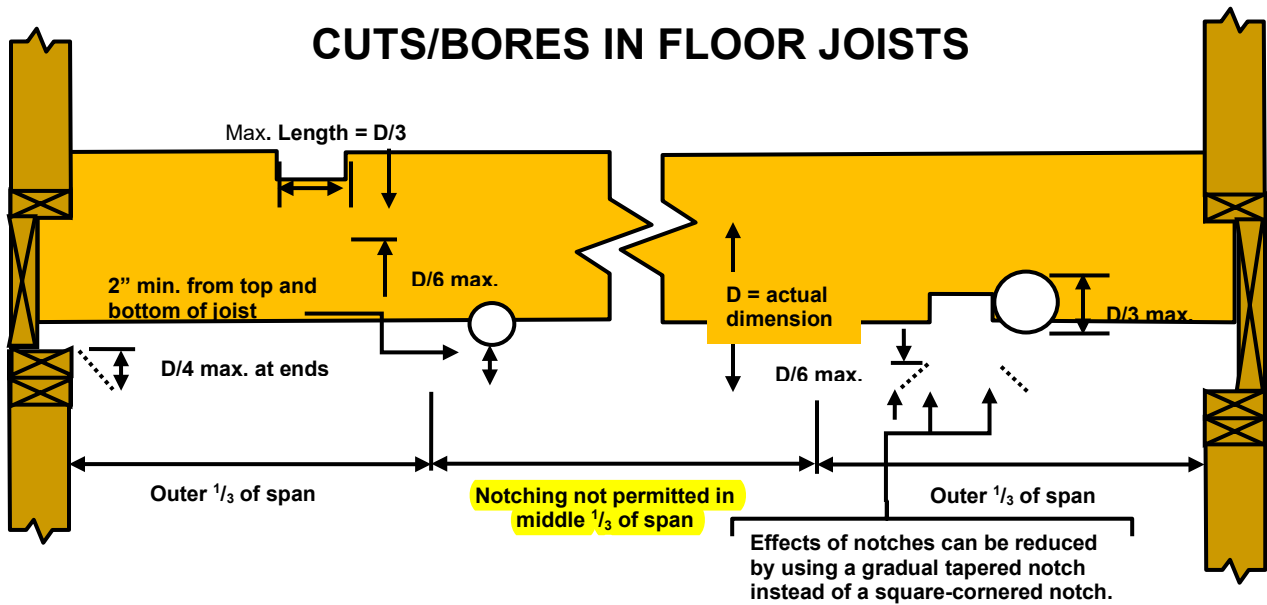
¹ Exterior or bearing studs may be bored or drilled provided that the diameter of the resulting hole is not greater than 60% of the stud width and provided that the studs are doubled and not more than two successive studs are bored, the edge of the hole is no closer than 5/8 inch to the edge of the stud, and the hole is not located in the same section as a cut or notch.

² If hole is between 40-60% of stud depth, then stud must be doubled and no more than 2 successive studs may be doubled and so bored





CUTS/BORES IN FLOOR JOISTS



HOLE OR NOTCH
GREATER THAN
50% OF TOP
PLATE WIDTH

EXTERIOR OR
BEARING WALL
TOP PLATE

- 16 GAUGE METAL TIE
- 1 1/2" WIDE
 - EXTEND 6" BEYOND EACH SIDE OF NOTCH
 - FASTEN WITH 8- 1 1/2" 10D NAILS EACH SIDE