



Building Inspections Department
216 4th Street N
Stillwater, MN 55082
(651) 430-8825

TWO-FAMILY DWELLING CONVERSION INFORMATION

CODE INFORMATION FOR CONVERTING SINGLE FAMILY DWELLINGS INTO A TWO-FAMILY DWELLING

To obtain a building permit for a two-family (duplex) conversion you **must** supply the following:

Signed and completed building permit application form.

Two (2) copies of a site plan, two (2) copies of floor plans (all levels/floors of building), two (2) copies of a cross section, and two (2) copies of all separation (separation details can be noted on the cross section) and firestopping details.

See pages 5, 6 and 7 for examples of plans and details required

Once the application and complete, correct plans are received by the Building Safety Department it can take up to 10-business days for plan review before the permit is issued. Please plan accordingly.

Required Inspections:

- 1) **Rough-In-Electrical** (before wires are covered), **-Plumbing** (before piping is concealed), **-Mechanical** (after ductwork and vents are in place). Separate permits are required for any electrical, plumbing and mechanical work being performed.
 - ◆ All rough-in inspections are done as applicable for the project and must be done before the framing inspection.
 - ◆ If you do not own and occupy, all electrical and plumbing work must be done by licensed contractors.
- 2) **Framing Inspection**-after all wall framing is complete and the rough-in electrical, plumbing and mechanical inspections have been approved.
- 3) **Fire-Resistive Assembly Inspection**- For walls, floor/ceilings, etc. that are part of a fire-resistive assembly, multiple inspections are required.
 - ◆ For an assembly requiring two fire-rated walls; the first inspection shall be when the interior layer (the layer between the walls) of gypsum of both walls is visible but before the joints and fasteners are taped and finished. This is typically done before either wall is in place, or after one wall is in place. The second inspection is when the outer layer of gypsum board is installed, but before the joints and fasteners are taped and finished.
 - ◆ For an assembly requiring two layers of gypsum on one wall/floor-ceiling assembly; the first inspection is after the first layer of gypsum board is installed, but before the joints and fasteners are taped and finished. The second inspection is after the second layer of gypsum board is installed, but before the joints and fasteners are taped and finished.
- 4) **Firestopping Inspection**-after all firestopping of fire-resistive assemblies is completed, but before it is covered or concealed.
- 5) **Insulation/Vapor Barrier Inspection**-after all insulation and vapor barrier has been installed.
- 6) **Final-Electrical, Plumbing and/or Mechanical** as needed.
- 7) **Final Building**-after project is complete & electrical, plumbing and/or mechanical final inspections have been completed and approved.
- 8) In addition to the inspections above the inspector may require other inspections to ascertain compliance with the provisions of the code.

Call 651-430-8825, 8 a.m. to 4:30 p.m., to arrange an inspection **at least one business day** in advance.

Inspection appointments are scheduled on a first-come first-serve basis, and there is no guarantee that you can get an inspection within 24 hours of calling. Inspections are available 9:00 a.m. to 11:00 a.m. and 2:00 p.m. to 3:00 p.m. Monday through Friday.

A building inspection is required at least every 6 months otherwise the permit will expire and a new permit will be required to finish project. When needed, an extension may be requested in writing.

Zoning requirements

Please contact the Planning Department at (651) 430-8822 for requirements regarding a specific property.

When converting a single -family dwelling into a 2-family dwelling:

The property must be zoned to allow for 2-family dwellings.

The property must meet minimum lot width and square footage for a 2-family dwelling.

The structure must meet minimum setbacks for a 2-family dwelling; setbacks are measured to the property lines.

Property lines are found by locating the property irons (buried in each corner of the lot) typically by using a metal detector. If the property irons cannot be found a surveyor can be hired to locate them.

The City of Stillwater DOES NOT survey properties. Sidewalks and fences are not necessarily on the property lines. The only way to find a property line is by finding the property irons.

Separation requirements

Dwelling units are required to be separated from each other by wall and/or floor-ceiling assemblies with a minimum of 1-hour fire-resistance rating when tested in accordance with ASTM E 119.

Floor-ceiling assemblies and wall assemblies must extend to and be tight against the exterior walls. Wall assemblies shall extend to the underside of the roof sheathing.

Exceptions:

- A fire-resistance rating of ½ hour is permitted in buildings equipped through-out with an automatic sprinkler system installed in accordance with NFPA13.
- Wall assemblies need not extend through attic spaces when the ceiling is protected by not less than 5/8" type X gypsum board and a code-compliant attic draft-stop is provided above and along the wall assembly separating the dwelling. The structural framing supporting the ceiling shall also be protected by not less than ½" gypsum board or equivalent.

Structures supporting the floor-ceiling assembly (bearing walls, exterior walls, etc.) must have a fire resistive rating equal or greater than the floor-ceiling assembly.

Dwelling units are also required to be separated from any common space by wall and/or floor-ceiling assemblies with a minimum of 1-hour fire-resistance rating when tested in accordance with ASTM E 119.

Rated assemblies **MUST** match the existing structure or what is being altered. For example: if you find a rated floor/ceiling assembly for 2x10 joists and there are only 2x8 joists in the house you **CANNOT** use that assembly. The assemblies are also typically specific on the types and locations off all connections, these must match exactly also.

Rated assemblies can be found in a number of places, including, but not limited to: UL (Underwriters Laboratories), Gypsum Association, etc.

Note: just adding 5/8" Type X gypsum board to a wall DOES NOT make a one-hour fire-rated wall UNLESS you can find a rated assembly stating it does.

Rated penetrations

Through and membrane penetrations must be fire-stopped per code. Typical penetrations include, but are not limited to: plumbing piping, electrical wiring, ducting/venting and blank openings or gaps. Firestopping is required in both the upper and lower membranes of the horizontal assembly and both sides of a wall assembly.

Sound transmission

Walls and floor/ceiling assemblies separating dwelling units shall provide airborne sound insulation for walls, and both airborne and impact sound insulation for floor/ceiling assemblies.

Airborne sound insulation for wall and floor/ceiling assemblies shall meet a Sound Transmission Class (STC) rating of 45 when tested in accordance with ASTM E 90. Penetrations or openings in construction assemblies must be sealed, lined, insulated, or otherwise treated to maintain the required ratings in addition to being fire-stopped.

Structural borne sound: floor/ceiling assemblies between dwelling units or between a dwelling unit and a public or service (shared) area within the structure shall have an Impact Insulation Class (IIC) rating of not less than 45 when tested in accordance with ASTM E 492.

Entry doors

Each unit is required to have one exit door with a minimum 3' width and minimum 6'-8' height.

Dwelling unit entrance doors, which share a common space, shall be tight fitting to the frame and sill to meet sound transmission requirements, and a minimum 20-minute fire-rating.

Smoke alarms/carbon monoxide detectors

When interior alterations, repairs or additions requiring a permit occur, or when one or more sleeping rooms are added or created in existing dwellings, the individual dwelling unit shall be provided with hardwired, interconnected smoke alarms in the following locations:

- In each sleeping room

- Outside of each separate sleeping area in the immediate vicinity of the bedrooms

- On each additional story of the dwelling, including basements but not including crawl spaces and uninhabitable attics. In dwellings or dwelling units with split levels and without an intervening door between the adjacent levels, a smoke alarm installed on the upper level shall suffice for the adjacent lower level provided that the lower level is less than one full story below the upper level.

 - Where the hardwiring and interconnecting of the smoke alarms would require removal of interior wall or ceiling finishes and there is no crawl space or basement available which could provide access for hardwiring and interconnection the alarms are allowed to be battery operated only.

Minnesota Statutes (Minn. Stat. § 299F.50) requires all multifamily or apartment-dwelling units to have a carbon monoxide alarm that meets U/L specifications within ten feet of each room lawfully used for sleeping purposes by August 1, 2008.

Egress windows

Windows in **existing** bedrooms do not need to meet current egress requirements per the building code, BUT rental code may require it. Please talk to the rental inspector for your area for more information.

Newly created bedrooms are required to have a window that meets current egress requirements. See the Egress Window handout for more information.

HVAC requirements

If using an HVAC contractor, they are required to be licensed with the City of Stillwater,

Heating systems:

Forced-air systems:

Separate furnaces must be provided for each unit. Air cannot circulate from unit-to-unit or unit-to-common space via the furnace/ductwork.

Each unit must have access to the unit's furnace.

If ducts penetrate a fire-rated assembly a listed firestop detail is required to be submitted.

Other systems:

Each unit must have access to the heating system.

If piping/ducts or other portions of the system penetrate a fire-rated assembly a listed firestop detail is required to be submitted.

Bath fans:

Are not allowed in a fire-rated floor/ceiling assembly unless it is tested and listed to be located in a rated assembly.

A non-rated bath fan may be located in the side wall, provided the side wall is not a fire-rated assembly.

If the bath fan duct is to penetrate the rated floor/ceiling assembly it must be continuous steel duct from the fan to the exterior, the type and gauge of steel shall match the required firestop detail requirements.

Dryer vent:

If the dryer vent duct is to penetrate the rated floor/ceiling assembly it must be continuous steel duct from the fan to the exterior, the type and gauge of steel shall match the required firestop detail requirements.

Plumbing requirements

If you do not own and occupy the property, a plumber licensed with the state of Minnesota is required to pull the permit and do the work.

Penetrations:

If any plumbing penetrates the fire-rated assembly a listed fire-stop detail is required to be submitted. The main water shutoff must be accessible to both units.

Water supply piping to both units must have separate independent shutoff valves to isolate systems (the shutoff valves must be accessible to the unit it is serving); or shutoff valves must be installed at all fixtures including existing fixtures.

No new piping or fixtures can be connected to illegal plumbing systems.

Electrical requirements

If you do not own and occupy the property, an electrical contractor, licensed with the State of Minnesota is required to pull the permit and do the work.

All electrical membrane penetrations in fire-resistive assemblies are required to be fire-stopped and must be of equal fire-resistive rating as the assemblies they are located in.

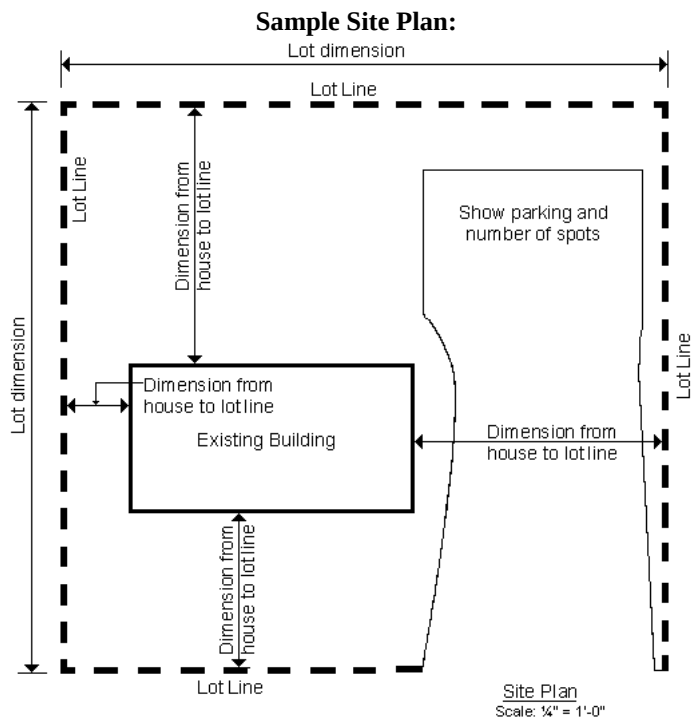
Only **ONE** electrical service is allowed.

Each unit and common space must have their own electrical panel.

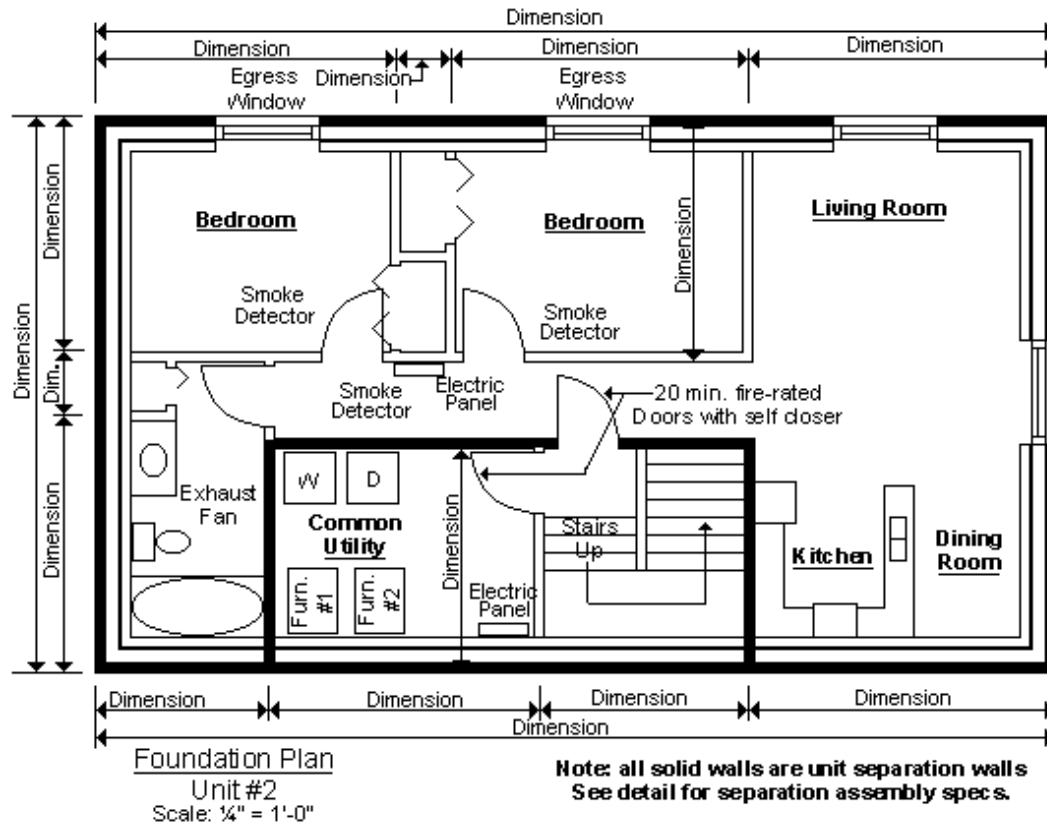
Please contact Erik Mead, the MN State Electrical Inspector, at (763) 269-5828 for information on specific projects.

Sample Plans

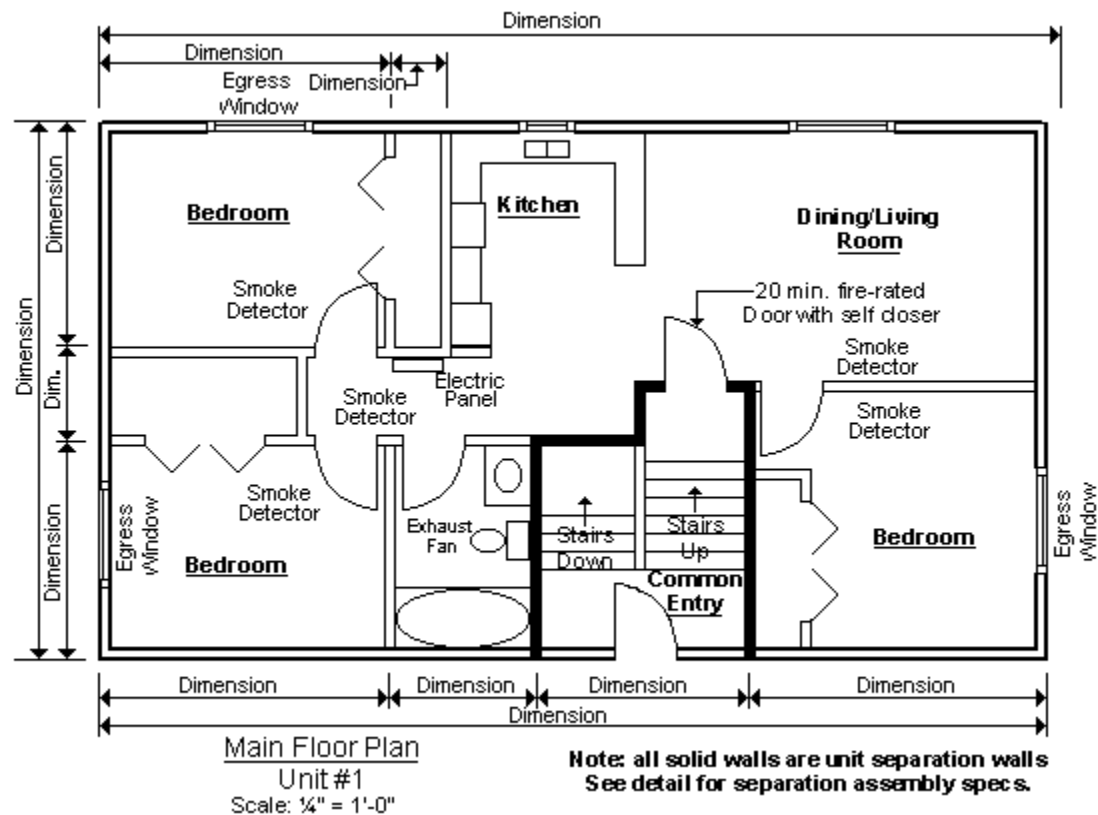
All projects are different; depending on the scope of the project additional information may be needed.



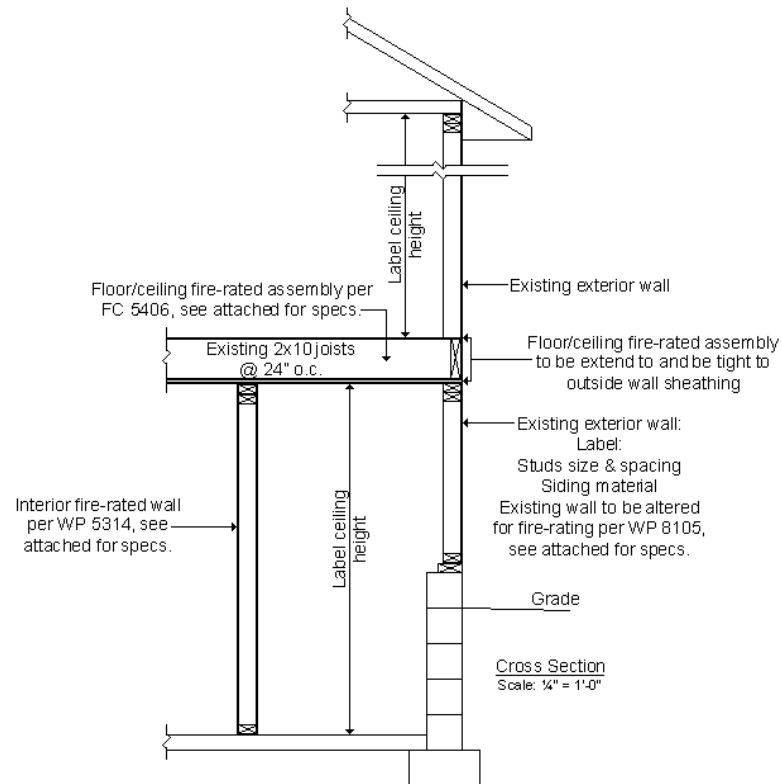
Sample Foundation Plan:



Sample Main Floor Plan:



Sample Cross Section:



Sample Fire-Resistive Assembly Details:

Interior Walls:

GA FILE NO. WP 3514 GENERIC 1 HOUR FIRE 35 to 39 STC SOUND

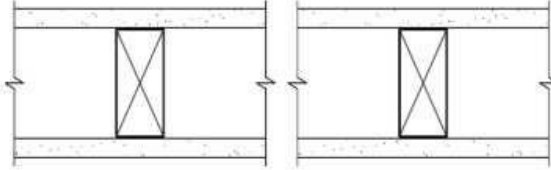
Thickness: $4\frac{3}{4}$ "

Approx. Weight: 7 psf

Fire Test: SWRI 01-4511-619[1], 3-94

Sound Test: See WP 3520

(G&H NG-246FT, 7-2-65)



GYPSUM WALLBOARD, WOOD STUDS

One layer $\frac{5}{8}$ " type X gypsum wallboard or gypsum veneer base applied parallel or at right angles to each side of 2 x 4 wood studs 16" o.c. with $\frac{11}{4}$ " Type W drywall screws 12" o.c.

Joints staggered 16" on opposite sides. **(LOAD-BEARING)**

Exterior Walls:

GA FILE NO. WP 8105 GENERIC 1 HOUR FIRE

Thickness: Varies

Approx. Weight: 7 psf

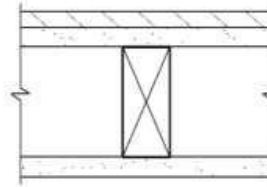
Fire Test: See WP 3510

(UL R3501-47, -48, 9-17-65,

UL Design U309;

UL R1319-129, 7-22-70,

UL Design U314)



GYPSUM WALLBOARD, GYPSUM SHEATHING, WOOD STUDS

EXTERIOR SIDE: One layer 48" wide $\frac{5}{8}$ " type X gypsum sheathing applied parallel to 2 x 4 wood studs 24" o.c. with $\frac{13}{4}$ " galvanized roofing nails 4" o.c. at vertical joints and 7" o.c. at intermediate studs and top and bottom plates. Joints of gypsum sheathing may be left untreated. Exterior cladding to be attached through sheathing to studs.

INTERIOR SIDE: One layer $\frac{5}{8}$ " type X gypsum wallboard, water-resistant gypsum backing board, or gypsum veneer base applied parallel or at right angles to studs with 6d coated nails, $\frac{17}{8}$ " long, 0.0915" shank, $\frac{1}{4}$ " heads, 7" o.c. **(LOAD-BEARING)**

Floor/Ceiling Assembly:

GA FILE NO. FC 5406 GENERIC 1 HOUR FIRE

35 to 39 STC SOUND

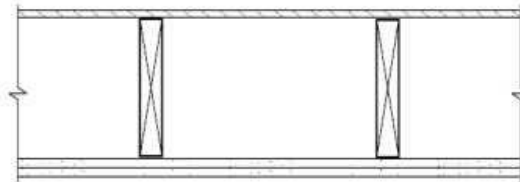
Approx. Ceiling

Weight: 5 psf

Fire Test: FM FC 172, 2-25-72;

ITS, 8-6-98

Sound Test: Estimated



WOOD JOISTS, GYPSUM WALLBOARD

Base layer $\frac{5}{8}$ " type X gypsum wallboard applied at right angles to 2 x 10 wood joists 24" o.c. with $\frac{11}{4}$ " Type W or S drywall screws 24" o.c. **Face** layer $\frac{5}{8}$ " type X gypsum wallboard or gypsum veneer base applied at right angles to joists with $\frac{17}{8}$ " Type W or S drywall screws 12" o.c. at joints and intermediate joists and $\frac{11}{2}$ " Type G drywall screws 12" o.c. placed 2" back on either side of end joints. Joints offset 24" from base layer joints. Wood joists supporting $\frac{1}{2}$ " plywood with exterior glue applied at right angles to joists with 8d nails. **Ceiling provides one hour fire resistance protection for framing, including trusses.**