

HOUSING PLAN REVIEW REQUIREMENTS

- 1) Residential contractor licensing is required per MN Statutes Chapter 326.
- 2) When excavating, if you encounter perched ground water, use a trash type pump to remove the ground water. Do not pull the sanitary sewer plug, or pump water/mud into the sanitary sewer. Incurred expense by the City to clean plugged sanitary lines will be back charged to the general contractor, and must be paid prior to certificate of occupancy.
- 3) Placement of footings on fill, black dirt, water soaked or marginal soils is prohibited, unless specifically designed and approved by a Registered Soils Engineer or Structural Engineer. If marginal soils are encountered, contact the Building Department immediately for a soils inspection.

Remove all organics (roots and grasses) beneath slabs and footings to a depth of 12" minimum.

- 4) The curb stop (water service) shall be adjusted to be flush with the finished grade and shall be accessible at all times during construction. This is the Contractor's responsibility, prior to final occupancy. Curb stops are not permitted under driveways. Locate them in the green space along side driveway. M.D.H. 4715.1800

Backfilling of the sanitary sewer and water service from the street to the house must be done in such manner as to cover and protect the pipe to a 4" minimum cover. This is to protect the pipe from rock and large clumps of clay when backfilling with a backhoe.

- 5) All structures shall be tiled inside and outside the footing, with positive fall to the required sump. Tile should have the filter sock placed on it. Minimum coverage of aggregate over the exterior drain tile is 1'-0". We require 8" of pea rock or 3/4" washed rock under all basement slabs. We recommend a floor drain be installed near the sump basket.
- 6) Footings and Foundations - The minimum requirements listed below are taken from the IBC and the 1998 State Building Code section 1300.6100. They are also based on Group II soil conditions typically found in the area. Copy of the State Conventional Foundation Construction requirements is available upon request at our office.

Frost Depth for Footings – Minimum footing depth as per State Zone II shall be 42 inches. Mn.S.B.C 1300.5500.

Minimum Footing Size for 12" masonry and 8" poured walls shall be 20" wide X 10" thick with two #4 rebar. This size may vary with unusual soil conditions.

Minimum Foundation Wall Thickness with unequal fill on each side (basements) shall be 12" masonry block or 8" poured concrete. Foundations for slab on grade homes and garages with equal fill on both sides may be 8" masonry block or 8" poured concrete.

Foundation Wall Reinforcement for walls with typical 7' of unequal fill, they shall be corefilled with a minimum #4 vertical rebar at 6'-0" maximum spacing for 12" masonry walls. For 8" poured walls, rebar shall be #4 bars at 6'-0" maximum spacing and #4 horizontal bars at 2'-0" maximum spacing. Do not center the rebar in the wall. Place rebar 3" from the inside on masonry walls and 1-1/2" from the inside of poured walls. All rebar shall be minimum grade 40.

Concrete, Mortar and Grout - Poured concrete shall be minimum 28-day strength of 3,000 psi. Masonry mortar shall be type M or S and all joints must be tooled and brushed clean. Grout for masonry wall reinforcing shall be minimum 28-day strength of 2,000 psi. Do not use mortar as grout material!

Form Ties on poured walls shall be removed on all foundations inside and outside. Where ties have been removed, patch all holes to prepare area for dampproofing.

Anchor Bolts shall be minimum 1/2" dia. with 7" minimum depth embedment. Place anchor bolts at 6'-0" on center and in line with the vertical wall rebar and within 12" from all corners and splices in the treated sill plates.

Floor Framing parallel to the foundation must be blocked at the anchor bolt locations in the first two joist or truss spaces. Also, metal angle clips must be used to fasten the floor joist, trusses or blocking to the sill plate at the anchor bolt locations.

- 7) Dampproofing - Foundation walls enclosing occupied space shall be dampproofed outside by approved methods and materials. All masonry block foundation mortar joints must be tooled and brushed clean to seal the joint. All poured concrete foundations must have the form ties removed and the holes patched. All foundation walls must be clean of any oils, dirt, and any projections which could cause the dampproofing to not adhere to the wall. Dampproofing materials may be any project approved for direct contact with masonry, concrete and soil. Material shall extend from a point 6" above grade down to the top of the footing.
- 8) Foundation Insulation - All foundations must be insulated to R-5 minimum the full height of the wall. Mn S.B.C. Chapter 7672.0600 Subp. 2. B. (2000 Minnesota Energy Code)
- 9) The foundation sill plates are required to be treated material. Sill seal required between the foundation wall and treated plate.
- 10) Sizing and design of micro-lams, glue-lams, headers, floor and roof trusses, girder trusses, etc. is the responsibility of the framing contractor and lumber material supplier/engineer. Typically, these require more than 1-1/2" bearing. Verify installation details with your material supplier's engineer.
- 11) All roofs require hurricane clips to secure the truss or rafter to the top plate of exterior walls. (Unless noted otherwise by the truss manufacturer's, or other registered structural engineer).
- 12) When installing roof trusses, manufacturers recommend that all required lateral bracing be installed prior to applying roof sheathing and shingles. Verify this with your truss manufacturer.

Lateral bracing must be installed as shown on the engineered drawing and as tagged on the trusses.

Bracing must lap at least two trusses or install a T-brace flat against narrow edge of truss web. Verify this with your truss manufacturer.

- 13) Gable end bracing requires one 2" x 4" at a 45 degree angle from peak down to bottom chord of the common truss and two 2" x 4"s across the top of the bottom chord from the single 2" x 4" brace out to the end wall truss at approximately 45 degrees. Completed bracing will look like a pyramid.
- 14) Framing inspection - engineered drawings for micro-lams, floor and roof trusses, truss layout, etc. shall be placed in the clear plastic inspection card holder/protector on site for the building inspectors use. The permit copy of the blue prints shall also be on site for all trades to use.
- 15) I-Joist framing – When using wood I-Joists for floor or roof framing, the contractor must follow the manufacturers instructions. This includes all sizing of joists, spans, bearing details, cutting & notching, spacing and securing.
- 16) Roofs of all heated buildings require one layer of No. 40 coated roofing or coated glass base or a self-adhering bituminous sheet s be applied from the eave to 12" inside the exterior wall line. U.B.C. Table 15-B-1. Not required for unheated garages. All of Minnesota is considered a severe climate area for determining roof under-layment requirements. Mn.S.B.C. 1300.4300.
- 17) Attic Ventilation – Net free ventilation area shall not be less than 1/300 of the attic area. 50% of the required venting shall be at the peak of the roof, and the balance located in the soffits. Older homes without vapor barriers at ceilings must use 1/150 to figure ventilation area. U.B.C. 1505.3, exception #1. At overhangs, a minimum 1 inch air space must be provided between the attic insulation and the roof sheathing.

When reshingling existing homes, attic ventilation must be installed to meet the above requirements.

- 18) 5/8 Type X sheetrock is required full height to roof sheathing on the garage side, and ½" sheetrock on the house side of the garage/house firewall. The garage/house walk door must bear a 20 minute fire label or be a 1-3/8" solid wood door, be self closing, and tight fitting with weather stripping on all four sides. If the garage ceiling is fire rated sheetrock, versus the vertical house/garage wall, the garage/house wall must have 5/8" Type X sheetrock to the ceiling, plus all garage bearing walls supporting roof trusses must also be sheetrocked with 5/8" Type X. This firewall shall extend into any soffit space in line with the fire wall. U.B.C. 302.4 Exception #3. All sheetrock joints and corners must be taped and mudded. Gaps between wood plates and concrete foundations must be caulked to create an air-tight seal.
- 19) 5/8" sheetrock is required on the bottom side of all stairs and landings which serve as the exit from the basement. This is required even for unfinished basements.
- 20) On all exterior walls and the garage/house firewall, insulation, poly and sheetrock must be installed prior to the fiberglass bath bay installation. MN S.B.C. 7672.0600 Subp. 3. F. (2000 Minnesota Energy Code)
- 21) In new construction, interlocked electric smoke detectors with battery backup shall be provided as drawn in red on the Building Permit Plan Drawings. The Building Code requires smoke detectors in all bedrooms, hallways near bedrooms, on each story, and in the basement. Locate the detectors in accordance with the manufacturers directions. Smoke detectors in existing homes being remodeled may be solely battery operated.

- 22) Each bedroom requires two (2) means of egress. Typically, one route by a person door and one route by an egress window with minimum clear openings of at least 20 inches wide and 24 inches high with no less than 5.7 total square feet. A minimum of two (2) means of egress are also required from every basement.
Finish sill height for all egress windows is 44" maximum from finish floor to the bottom of the window opening. Basement window wells over 44" deep shall have a permanently affixed ladder or stair which is accessible with the window in the open position.
- 23) Tempered glass is required in all doors, and within 2'0" of any doors. Also, any glass within 60" above a standing surface or drain inlet of tub and showers must be tempered.
- 24) Rise and run for stairways is 8" maximum rise and 9" minimum run, with no more than 3/8" overall fluctuation.
- 25) Handrails shall be 34" - 38" high and returned to the wall. Any stair with four or more risers must have a handrail. This includes exterior stairs.
- 26) Guardrails shall be 36" high minimum, and spindles shall be spaced so a 4" sphere cannot pass through the opening.
- 27) A 22" x 30" attic access shall be provided, typically in the garage or main hallway. 30" minimum headroom must be above the access panel. If installed in the firewall at the house/garage separation, 5/8" Type X sheetrock is required on the access panel. The attic access panel must be weatherstripped and insulated to a minimum of R-38. (2000 Minnesota Energy Code 7672.0600 Subp. 11. D.)
- 28) Attic Insulation. Minimum R-38 required. Insulation thickness markers shall be placed throughout the attic at ten-foot spacing. A completed insulation receipt attic card must be attached to a framing member near the attic access and be in clear visible location. (2000 Minnesota Energy Code 7672.0600 Subp. 11. C.)
- 29) Bathrooms and water closet compartments shall be provided with exhaust ventilation to the outside. If exhausting through the soffit, complete separation from the attic is required. The vent must remain full size and direct to the outside. Five air changes per hour must be provided. U.B.C. 1203.3. The use of mechanical air-to-air exchangers installed per the State Energy Code are also an approved method of venting bathrooms.
- 30) The green water resistant type sheetrock is approved for use only in ceramic tile installations. In no case shall it be used on ceilings or on exterior walls with a vapor barrier. We suggest using cement board material on outside walls.
- 31) Prior to insulating and sheetrocking, verify with the electrician that all electrical inspections have been completed and the inspection tag is placed inside an electrical box. The Electrician is responsible for installing the wire for the water utilities remote reader.
- 32) The house numbers (4 inch minimum height) shall be on the building and must be visible from the street prior to the Final Inspection.
- 33) Automatic Garage Door Openers – All garage door openers must have automatic reversing

requirements. Mn.S.B.C. Chapter 325 F.

- 34) Driveways and Parking Slabs – Shall be setback from property lines same as for garages. Surface shall be a durable material to control dust.
- 35) Site Grading – When grading the lot for drainage, care must be taken to keep surface water from running onto neighboring property and creating a drainage and ponding problem. Typically this can be done by creating drainage swales to channel the water around to the sides and drain to the street or alley.
- 36) Silt fencing and/or hay bales shall be installed by the contractor around catch basins, and street locations vulnerable to washout. Contractor/Building permit applicant shall be responsible for all street cleanup.
- 37) Remodeling of existing homes – Any remodeling project that will cause a home to become more air-tight by installing new windows, siding or insulation to an existing home, installing a combustion air intake is required. Typically a 4" round duct is required for one gravity vented appliance, and a 6" round duct is required for two gravity vented appliances. This combustion air supply must be installed within the mechanical room where the appliances are located.

* For specific language reference the following:

M.H.D. = MN Health Dept. - Plumbing Code 1994 w/1998 amendments

Mn. S.B.C. = MN State Building Code 1998

U.M.C. = Uniform Mechanical Code 1991 w/State amendments

I.B.C. = International Building Code