RESIDENTIAL STAIRS

Construction of Code Compliant Stairs

Many of the buildings we use each day have steps, or stairs in them, especially in our homes. In both residential and commercial construction we sometimes see sets of stairs that are focal points of an entry or foyer, or they may just be a simple set of stairs hidden away behind walls and a door. No matter where the stairs are located though, for those who have little or no experience in constructing a set of stairs, the first couple sets of stairs can be a bit of a challenge. Through the use of a little simple math, a few construction skills, and following the code requirements for stairs, the challenge can be made much easier. If you've ever walked the stairs in some of the older homes throughout our area, you may understand why the building code has requirements for stair construction The stairs of old were sometimes steep and narrow, as a limited amount of space was allowed for a staircase. The building code has requirements for such things as stair width, riser height, tread depth and head clearance, so that the stairs constructed in today's building projects are built with the user's safety in mind. Chapter 3 of the Michigan Residential Code contains the code requirements for residential stairs.
The following information will provide the basic code requirements for stair construction.

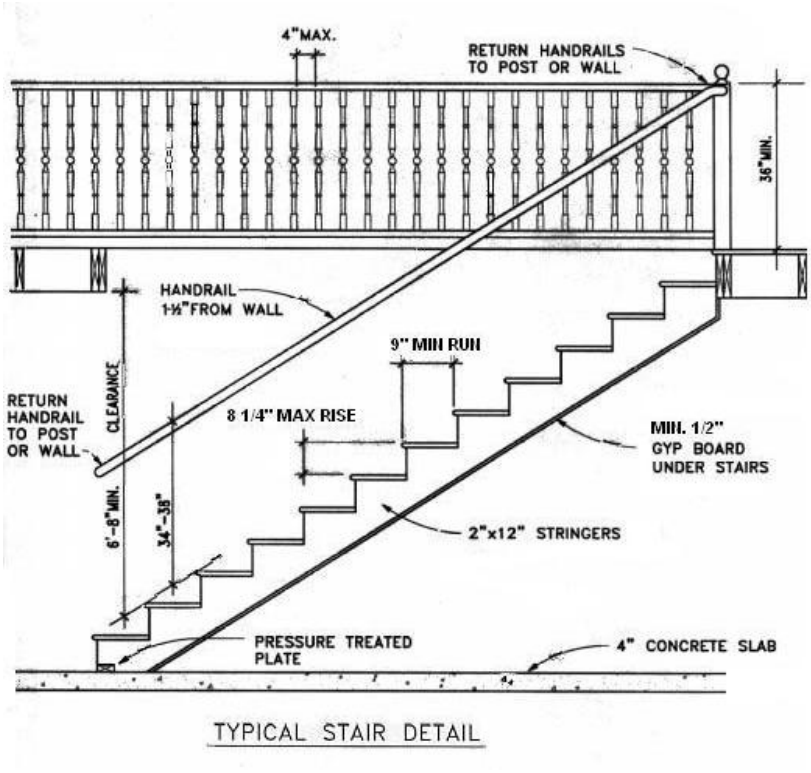
Width: Minimum stair width is to be no less than 36", measured from finish wall to finish wall. The handrail is allowed to project into that space, but no more than 4½".

Risers: The maximum rise allowed per step is 8¼ . All risers are required to be equal in height in a flight of stairs. The code does allow a ⅜ variation from the greatest to the smallest riser in a flight of stairs.

Treads: The minimum tread depth, or run of a tread is to be no less than 9". This distance is measured from nosing to nosing. When laying out a stair stringer, if the run of each step is less than 9". Your stairs will not meet code.

Nosing: Unless the treads of the stairs are over 11" in depth, a nosing is required on the treads. The nosing typically has a radius of about ½". Stair nosings must project out a minimum of ¾" and a maximum of 1¼" from the riser.

Head Clearance: The minimum head clearance at stairs is to be no less than 6'-8". This measurement is taken vertically from a diagonal line crossing the nosing to any obstruction or ceiling above the stairs.



TYPICAL STAIR DETAIL

Stair Winders: Stair winders are allowed, but must be at least 6" wide at the narrow end, and be at least 10 inches wide at a point 12" out from the narrow end.

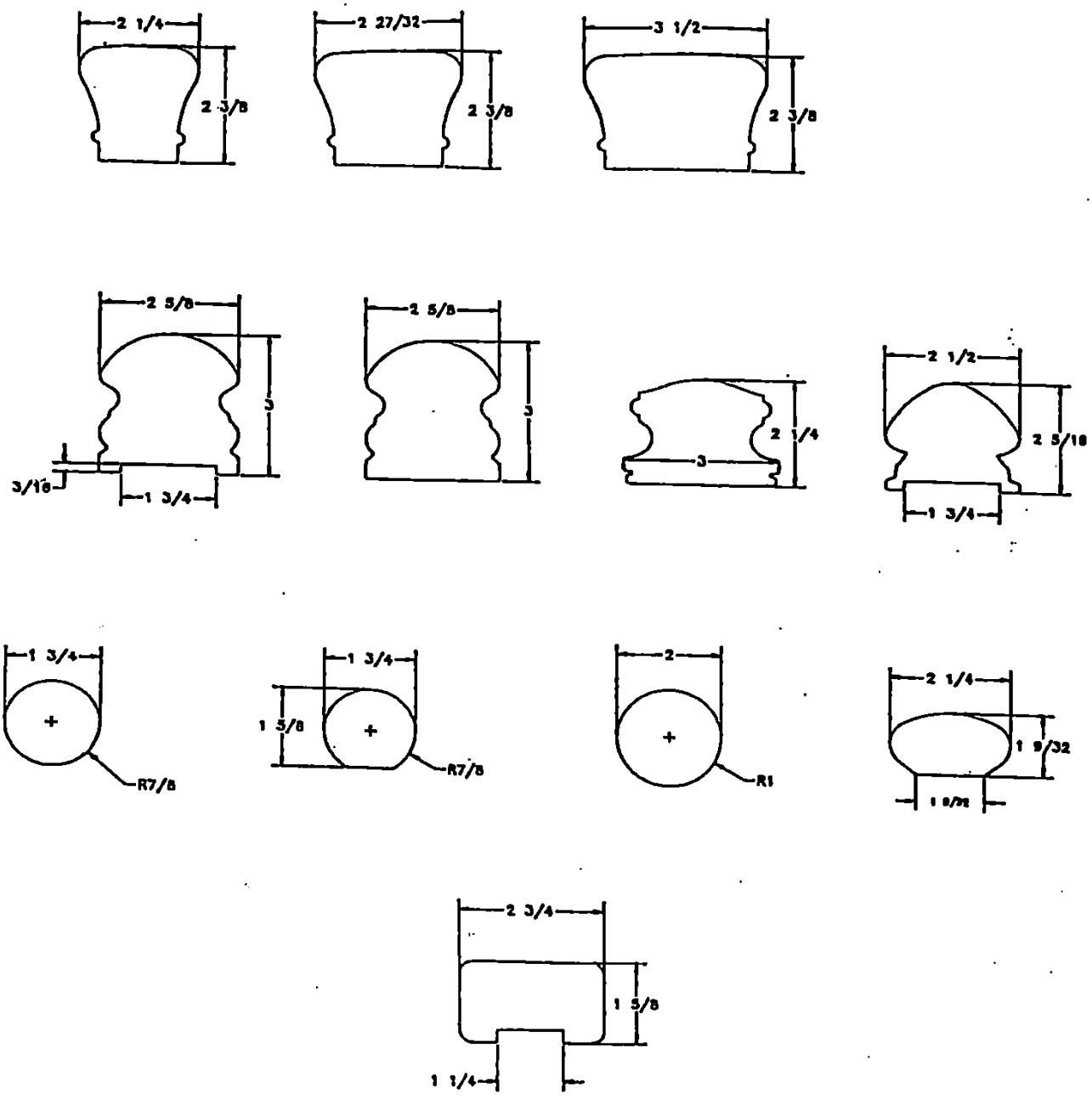
Under Stair Protection: When stairs are enclosed and accessible underneath, in other words, a closet is provided under the stairs, then the underside of the stairs as well as the walls enclosing that space under the stairs are required to be covered with minimum ½" drywall.

Handrails: Handrails are required on at least one side of residential stairs that have 4 or more risers, and must meet the building code requirements for graspability. The handrail must be continuous for the entire length of the flight of stairs, from the bottom riser up to the top riser with the handrail ends returned to the wall or newel posts. The height of handrails is required to be 34" - 38" high, measured vertically from the nose of the treads.

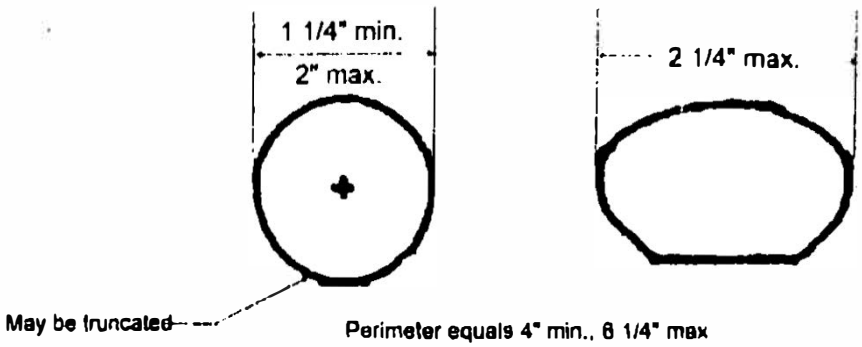
Guardrails: Guardrails are required when the walking surface of the stairs is more than 30" above the floor or walking surface below. Guardrails must be a minimum of 34" high, when running along the open side of stairs, but must be a minimum of 36" high at locations such as landings, balconies, lofts, etc. The maximum open space between spindles or balusters can be no more than 4".

Landings: Landings or floors are required at the top and bottom of stairways. Doors may not swing over stairs, unless a landing is provided, for the door to swing over. Doors that connect a garage and house are exempt from the landing requirements as long as the door does not swing over the stairs. Landings are required to extend a minimum of 36" in the direction of travel.

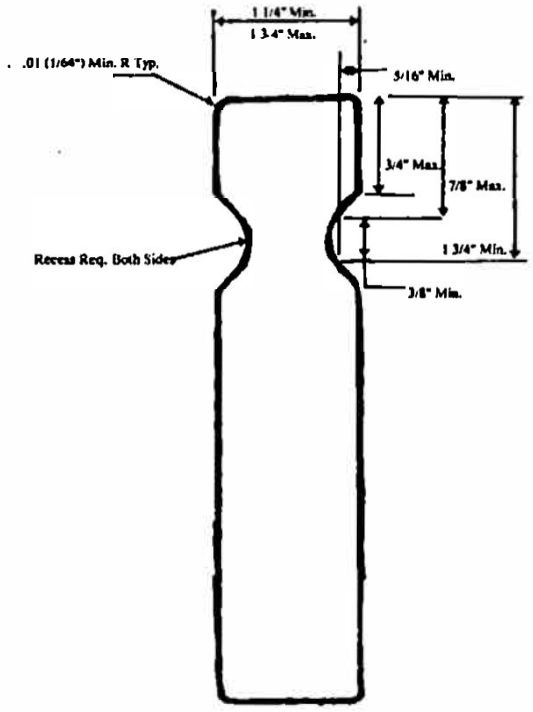
While this is just a summary of what the code requires in for typical residential straight stair construction, additional information can be found by contacting your local building dept. There are additional code sections that deal with commercial, spiral and circular stairs. The Charlevoix County Department of Building Safety has a handout available that provides more detail on the code requirements for typical straight stairs in residential construction. The handouts can be found at the Charlevoix County Building Dept., as well as on the county website (www.charlevoixcounty.org) . As always, construction done to meet or exceed the building code requirements will provide building owners with a well built and safe construction project, one that should last for many years to come.

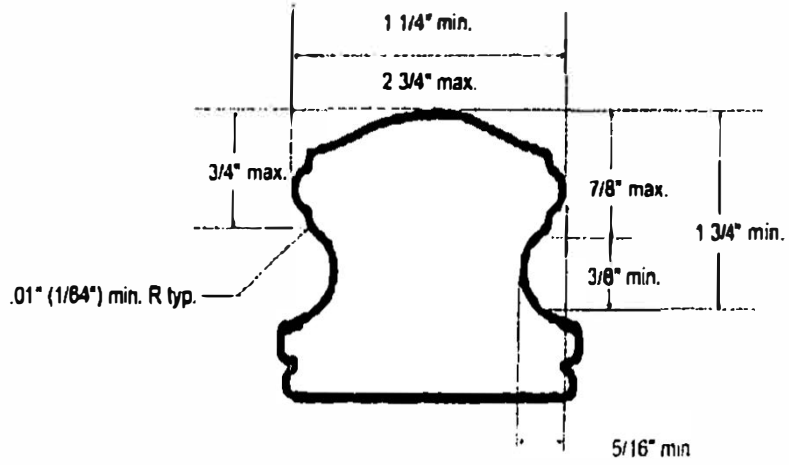


Attachment A
Michigan Department of Labor - Bureau of Construction Codes
Technical Bulletin #13: **Handrail Graspability**



TYPE I Handrails





TYPE II Handrails
(Includes 2x6 style Handrails)