

# Village of Winfield

## Guardrail Requirements (section 312)

(Based on the 2015 Illinois Residential Code for 1 & 2 Family Dwellings)

The following code requirements are general in nature and under specific circumstances additional requirements may be required.

1. Open sided floors, decks or balconies greater than 30" above the floor or grade requires guardrails.
2. Guardrails shall be a minimum of 36" minimum in height above the floor or deck surface.
3. Open sides of stairs with a total rise greater than 30" shall have guardrails. These guardrails shall be a minimum of 34" above the nosing of the treads.
4. Guardrail opening dimensions in the intermediate rails or ornamental closures shall not allow a 4" sphere to pass through. Exception to this rule is the triangular area between the tread, riser and bottom rail of the guardrail shall not allow a 6" sphere to pass through.

Note: The top rail of the guardrail shall not be used as the handrail unless it complies with the handrail requirements for shape, location, continuity, clearance from surrounding materials and height above the tread nosing.

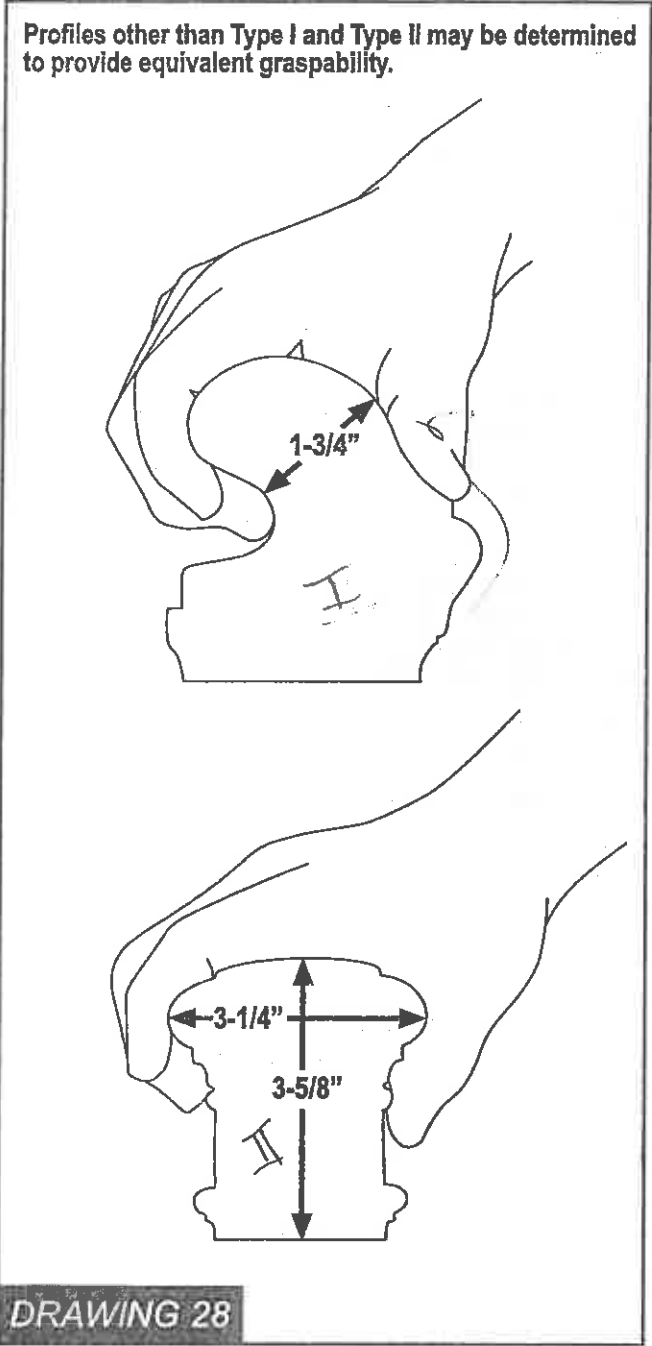
## Handrail requirements (section 311.7)

(Based on the 2015 Illinois Residential Code for 1 & 2 Family Dwellings)

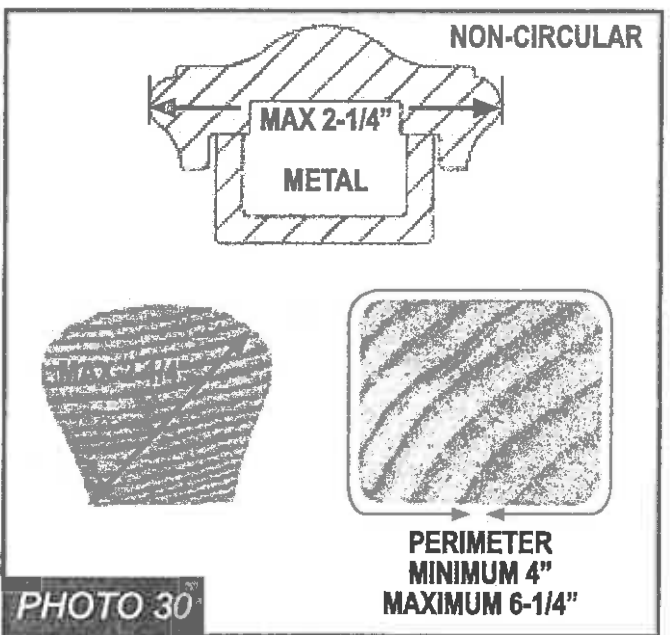
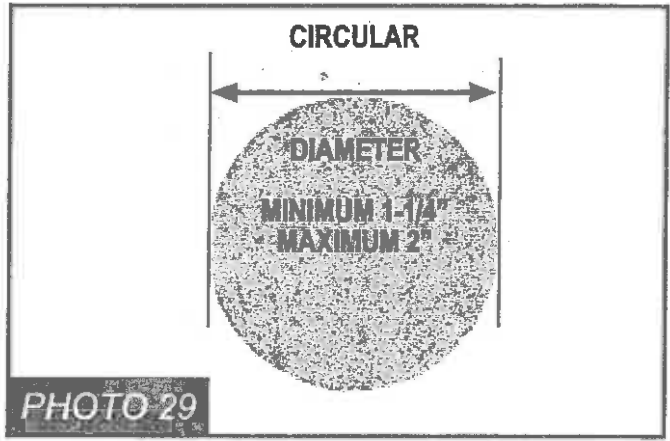
1. Top of handrail shall be 34"-38" inches above the nosing of the treads
2. Handrail diameters shall be between 1 ¼"-2"
3. Handrails shall be continuous full length of the run of stairs
4. Handrail ends shall be returned to the guardrail, wall, post of step
5. Edges of handrails shall have a minimum radius of 1/8"
6. Handrails shall be spaced away from the wall, guardrail or other feature to allow a minimum of 1 ½" of space between them and the surface.
7. Handrails are required to be on at least one side of the stair
8. Stairs with 4 or more risers require handrails

**R311.5.6.3 Handrail grip size.**

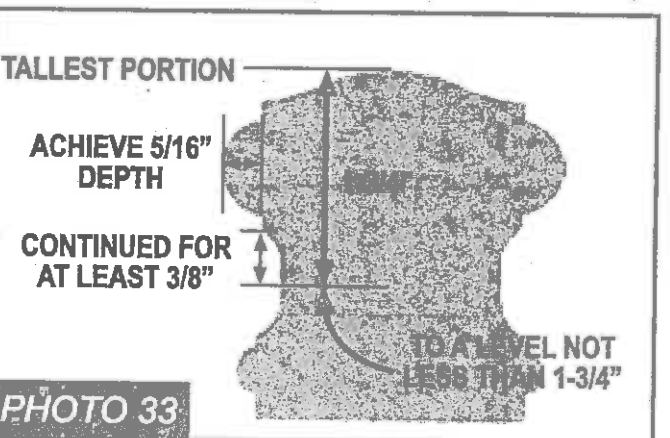
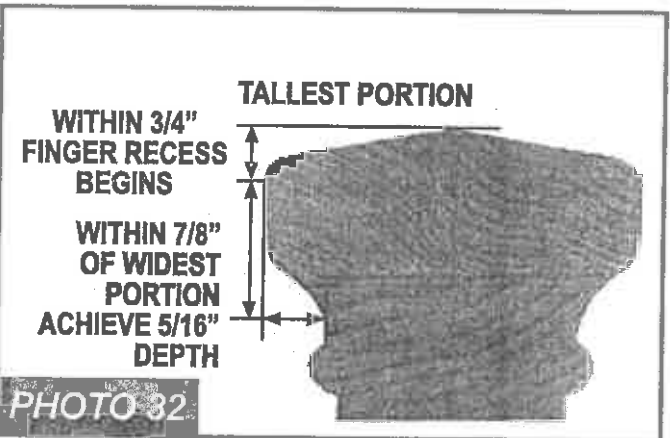
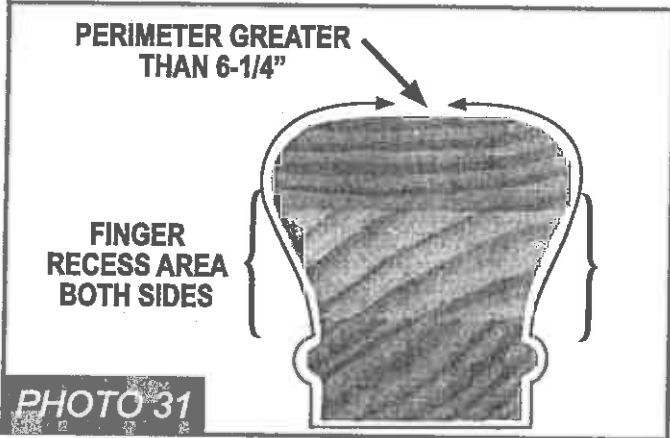
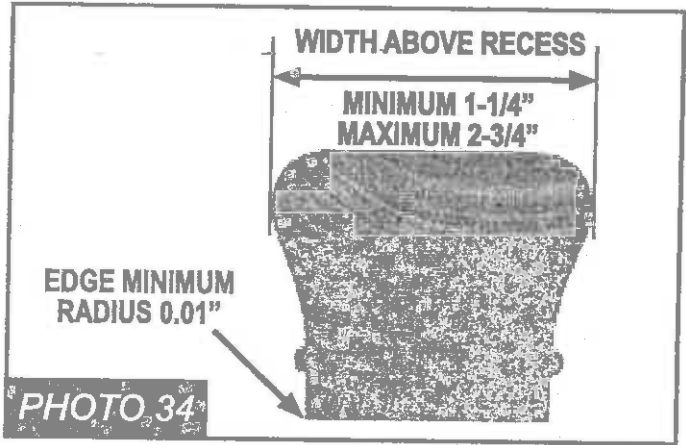
All required handrails shall be of one of the following types or provide equivalent graspability. **DRAWING 28.**



1. Type I. Handrails with a circular cross section shall have an outside diameter of at least 1 1/4 inches (32 mm) and not greater than 2 inches (51 mm). **PHOTO 29.** If the handrail is not circular it shall have a perimeter dimension of at least 4 inches (102 mm) and not greater than 6 1/4 inches (160 mm) with a maximum cross section of dimension of 2 1/4 inches (57 mm). **PHOTO 30.**



2. Type II. Handrails with a perimeter greater than 6¼ inches (160mm) shall provide a graspable finger recess area on both sides of the profile. **PHOTO 31.** The finger recess shall begin within a distance of ¾ inch (19 mm) measured vertically from the tallest portion of the profile and achieve a depth of at least 5/16 inch (8mm) within 7/8 inch (22mm) below the widest portion of the profile. **PHOTO 32.** This required depth shall continue for at least 3/8 inch (10mm) to a level that is not less than 1¾ inches (45 mm) below the tallest portion of the profile. **PHOTO 33.** The minimum width of the handrail above the recess shall be 1¼ inches (32 mm) to a maximum of 2¾ inches (70 mm). **PHOTO 34.** Edges shall have a minimum radius of 0.01 inches (0.25 mm). **PHOTO 34.**



**SMA**  
STAIRWAY MANUFACTURERS' ASSOCIATION

**FULL SCALE TYPE II RAIL TEST**

**Instructions:**  
Position cross section of rail with highest point touching line AB and left edge touching line AC. Keeping level axis of rail parallel to line AB.

Must complete tests 1) to 4) to pass  
**R315.2 Hand grip size test.**  
If rail is not symmetrical both sides must pass.

- 1) Rail must not be wider than 2-3/4 in.
- 2) Or less than 1-1/4 in.
- 3) Within 3/4 in. finger recess must begin
- 4) Must see entire black box

Level axis guide lines

Reproduction check: solid line measures 2.75 in.

**R311.5.7 Illumination.**  
All stairs shall be provided with illumination in accordance with Section R303.6.