

**PLEASE READ**

**Residential Plan Review Requirements  
Revised 1-25-18**

***(MAKE SURE ALL TRADESMEN/CONTRACTORS HAVE READ THE FOLLOWING CODES AND REGULATIONS BEFORE BEGINNING PROJECT)***

The following items are commonly overlooked items that have resulted in rejection of project or delayed occupancy.

Date: \_\_\_\_\_

Structure: \_\_\_\_\_

Address: \_\_\_\_\_

\_\_\_\_\_  
Signature

\_\_\_\_\_  
Date

**FOOTINGS & FOUNDATIONS**

1. Foundation drains shall be provided and installed on a minimum of 2 inches of washed rock, covered with a minimum of 6 inches of the same material, and be covered with a filter membrane material. IRC R-405.
2. Minimum ½" x 10" anchor bolts required 12" from each corner and board splice end, 6 feet on center thereafter, or more as per braced wall requirements. IRC R-403.
3. Bottom of footing shall be a minimum of 30 inches below finished grade. IRC R-403 Amendments.
4. Foundation walls of habitable rooms located below grade shall be waterproofed as required by Section IRC R-406.2.
5. Foundation insulation required by Section 502.2.1.4 of the IEC. Insulation must extend from top of slab downward minimum 24" and extend horizontally to the interior for a distance of 24". Minimum R-6.

## **STAIRS & GUARDRAILS**

6. Stairs shall have 7 3/4" maximum rise with 10" minimum run. (Cut of the jack determines this) All dimensions shall not vary more than 3/8". IRC.R-311.5.3.
7. Guardrails shall be **minimum of 36" high** with intermediate rails spaced such that a **4" diameter sphere cannot pass through**. **Guardrails shall be built to this standard whether required or not.** Guardrails are **required** when any floor or raised area is over 30 inches above floor level or finish grade. In addition, guardrails are required on the open sides of stairways including basement stairways with a total rise of more than 30 inches above floor or grade below. Guardrails shall be a minimum of 34 inches above nosing of treads. IRC.R-312.
8. Handrail assemblies and Guards shall be able to resist a single concentrated load of 200 pounds, applied in any direction, at any point along the top. Fr. Cnty. Supplement per IBC 1607.7.1.1.
9. Handrails are required on stairs with four(4) or more risers. 34-38" above nosing of treads. Handrails shall be made to return or shall terminate at a newel post or safety terminal. IRC.R-311.5.6. (See attachment for possible profiles).
10. Guardrails are required on both sides of basement stairs if left open. Minimum height is 34 inches above nosing of stair treads. Handrail is required on one side of the guardrail system. Handrail shall not be less than 1 1/4" or more than 2 5/8" in cross-section. IRC R-311.5.6. (See attachment).

## **ENGINEERED SYSTEMS**

11. All trusses or rafters shall have roof tie-downs installed. IRC R-802.11.
12. Wood trusses shall be designed in accordance with accepted engineering practice. Design drawings shall be submitted to the inspection department. ICRC-802.10.1 and 802.10.2 or R502.11. Stamped plans must be on site at time of rough-in inspection. Exposure C, 90 MPH Required.
13. I-joint, truss joint and beam plans must be on site at time of rough-in inspection.

## **EGRESS**

14. Emergency egress windows in bedrooms shall have a clear height opening of 24" with a clear width of 20". The minimum net clear opening shall be 5.7 square feet. Sill height shall not be more than 44" above floor. Windows shall be operational from the inside of the room without the use of keys or tools. Grade floor openings may be reduced to 5.0 sq. ft. net opening. IRC-310.
15. Basements with habitable space shall have at least one openable emergency escape and rescue opening. IRC-310.

## **ELECTRICAL**

16. Electrically wired smoke detectors with battery backup shall be installed in all bedrooms, hallway adjacent to bedrooms and basement. All detectors shall be interconnected so that actuation of one will actuate all detectors. See attached. IRC R-313.
17. Ground fault receptacles required in all receptacle locations serving the kitchen counter top, all outdoor receptacles, basement receptacles, some laundry room receptacles and garage receptacles except for dedicated receptacles. IRC E 3802.
18. Arc-fault circuit interrupters are required for all bedroom outlets. E3802.
19. Bathrooms shall be served by a minimum of one 20 Amp circuit to supply bathroom receptacle outlets. Such circuits shall have no other outlets. Bathrooms may be grouped together on a single 20 Amp circuit. IRC E3603.
20. A minimum of one 20 Amp laundry branch circuit shall be provided and shall have no other outlets. IRC E3603.
21. Minimum two - 20 Amp small appliance kitchen circuits required. IRC E-3603.
22. Electrical boxes shall not be located in cold air return spaces. NM cable shall pass through perpendicular to the long dimension of these spaces. IRC E-3804.7.
23. End of island or peninsula counter in kitchen shall have an electrical outlet installed. IRC E-3801.
24. Each wall space 2 ft. or more wide shall have at least one receptacle provided. IRC.E 3801.

## **PLUMBING**

25. All plumbing pipes extending through concrete floor shall be protected by protective coating or wrapping. IRC.P-2603.3.
26. Plumbing water lines shall be air tested at a minimum 50 PSI, or for plastic, not less than the working pressure of the system, for a period of 30 minutes. IRC.P-2503.6.
27. Plumbing drain lines shall be tested with water column minimum 10 feet above the highest fitting connection and held for a minimum period of 15 minutes. Air testing, as an alternate, shall be at minimum 5 PSI held for at least 15 minutes. IRC.P-2503.5.1.

28. Drainage piping serving fixtures which has flood level rims located below the elevation of the next upstream manhole cover of the public sewer serving such drainage piping shall be protected from backflow of sewage by installing an approved type backwater valve. Valve shall be accessible with a bolted access cover. Examples of fixtures that may fall under this requirement are, but not limited to, floor drains in basement floors and clothes washer standpipes located in the basement level. IRC.P-3008.

## **HVAC/MECHANICAL**

29. Hearth shall extend a minimum of 8" past each side of fireplace opening and shall extend a minimum of 16" in front of fireplace opening that is less than 6 square feet. If opening is six square feet larger, contact Building Department. IRC R-1003
30. Heating supply vents terminating under cabinets or vanities shall have continuous metal boot from furnace to the register. (Flame spread index cannot exceed 200). IRC.M-1601.

Exterior air supply to assure proper fuel combustion required for fireplace. The exterior intake shall be capable of providing all combustion air from the exterior of the dwelling or from ventilated attic or crawl spaces(unless the inside air pressure is neutral or positive) the intake shall be covered with a corrosion resistant screen of 1/4" mesh.

The air intake passage way shall be not less than 6 square inches and not more than 55 square inches. The inlet can be located in the sides of the firebox chamber or within 24" of the firebox opening on or near the floor. Inlet shall be closeable and designed to prevent burning material from dropping into inlet. IRC.R-1005.

31. Outside combustion air for fuel burning appliances shall be supplied through openings or ducts extending from appliance room to the outdoors. One opening shall be within 12" of the top and one within 12" of the bottom of the space. Vertical duct openings shall have a free area of not less than one square inch per 4,000 BTU/HR of the total input rating of all equipment in the space. Horizontal ducts require one square inch per 2,000 BTU. IRC.M-1703.
32. Combustion air obtained from an attic that shall have attic ventilation sufficient to provide the required volume of air. IRC.M-1703.

## **GENERAL BUILDING DESIGN**

33. Setbacks from property lines shall be as per Zoning Regulations.
34. Ground Snow load 20#
35. Wind Speed 90 mph-3 second gust. Exposure C
36. Seismic A/B

37. All wood in contact with concrete masonry or exposed to weathering shall be treated or naturally decay resistant. Wood joists closer than 18 inches or wood girders closer than 12 inches to exposed ground shall be treated. IRC.R-319.
38. Untreated wood or siding shall be a minimum of 6" from grade. R-319
39. Landings are required on each side of an exterior door. Exterior landing maybe 7 ¾" below if main door does not swing out. Width of landing shall not be less than the door served and shall extend minimum 3 feet in direction of travel. IRC-311.4.3.
40. Lot shall be graded so that the grade away from the foundation falls a minimum of 6" within the first 10 feet. IRC.R-401.3.
41. All concealed spaces, openings around vents, pipes, wiring, ducts, chimneys and fireplaces shall be fire stopped at the ceiling and floor level with non-combustible materials. IRC.R-602.8.
42. Attic ventilation required with an area of not less than 1-150 of the area of the space ventilated or see exceptions in IRC. IRC.R-806.
43. Attic access shall be provided not less than 22" by 30" with a clear height above opening greater than 30". Attic access shall be located in hallway or other readily accessible area. IRC.R-807
44. Windows with bottom edge less than 18 inches above the floor with the top edge more than 36 inches above the floor and with an exposed area of an individual pane great than 9 sq. ft. shall be safety glazed. Glazing in bathing areas – the bottom edge of which is less than 60 inches above the drain inlet shall be safety glazed. IRC R-308.
45. 6-mil moisture barrier required under occupied slabs. IRC R-506.
46. Approved corrosion-resistive flashing shall be provided at top and sides of all exterior window and door openings in such a manner as to be leak-proof. Flashings shall be installed at the intersection of chimneys or other masonry construction with frame or stucco walls with projecting lips on both sides under stucco copings under and at the ends of masonry, wood or metal copings and sills; continuously above all projecting wood trim; where exterior porches, decks or stairs attach to a wall or floor assembly of wood-frame construction; at wall and roof intersections; under built-in gutters; at junction of chimneys and roofs; in all roof valleys and around all roof openings. IRC R-703.8.

## **ROOFS**

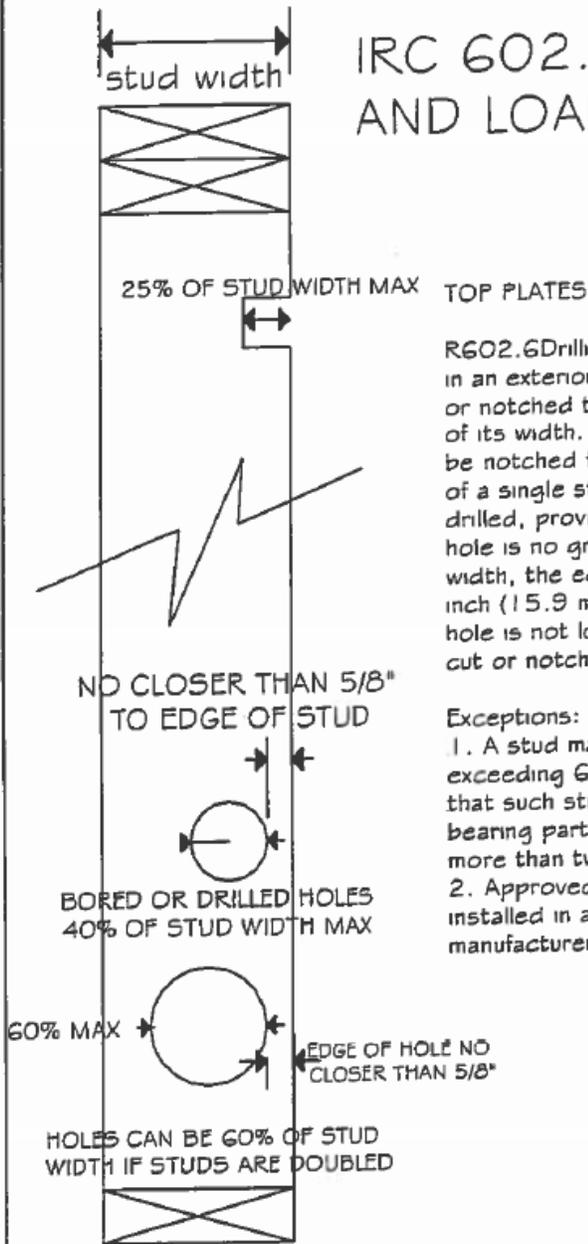
47. IRC Chapter 9. Ice shield underlayment is required.

## **GENERAL**

48. Boring and notching of studs and rafters and floor joists shall conform to the limitations in Chapter 5 and 6 of the IRC. (See attachment).
49. Insulation values shall be as follows for conditioned areas:  
Slabs-R-6, Foundation walls-R-9, Crawlspace walls-R-17, Floors (uninsulated/conditioned crawlspace) R-19, Walls-R-16, Ceilings-R-38, U-factor glazing-.45.
50. **SPRAY FOAM INSULATION:** All products **must be preapproved** by this office. Please present data sheets from manufacturer along with ICC ESR report for the product proposed. A **thermal barrier** must be installed over this material when exposed in occupied spaces. An **ignition barrier** may be accepted in certain unoccupied spaces per the ESR Report Requirements. If your installer says it is not required, have him contact us and his manufacturer.

**\*The code requirements listed herein are not all inclusive and do not relieve the contractor, builder or owner from the requirement to comply with other codes, ordinances and manufacturer's instructions not listed herein.**

# IRC 602.6(1) EXTERIOR WALLS AND LOAD BEARING WALLS



R602.6 Drilling and notching - studs. Any stud in an exterior wall or bearing partition may be cut or notched to a depth not exceeding 25 percent of its width. Studs in nonbearing partitions may be notched to a depth not to exceed 40 percent of a single stud width. Any stud may be bored or drilled, provided that the diameter of the resulting hole is no greater than 40 percent of the stud width, the edge of the hole is no closer than 5/8 inch (15.9 mm) to the edge of the stud, and the hole is not located in the same section as a cut or notch.

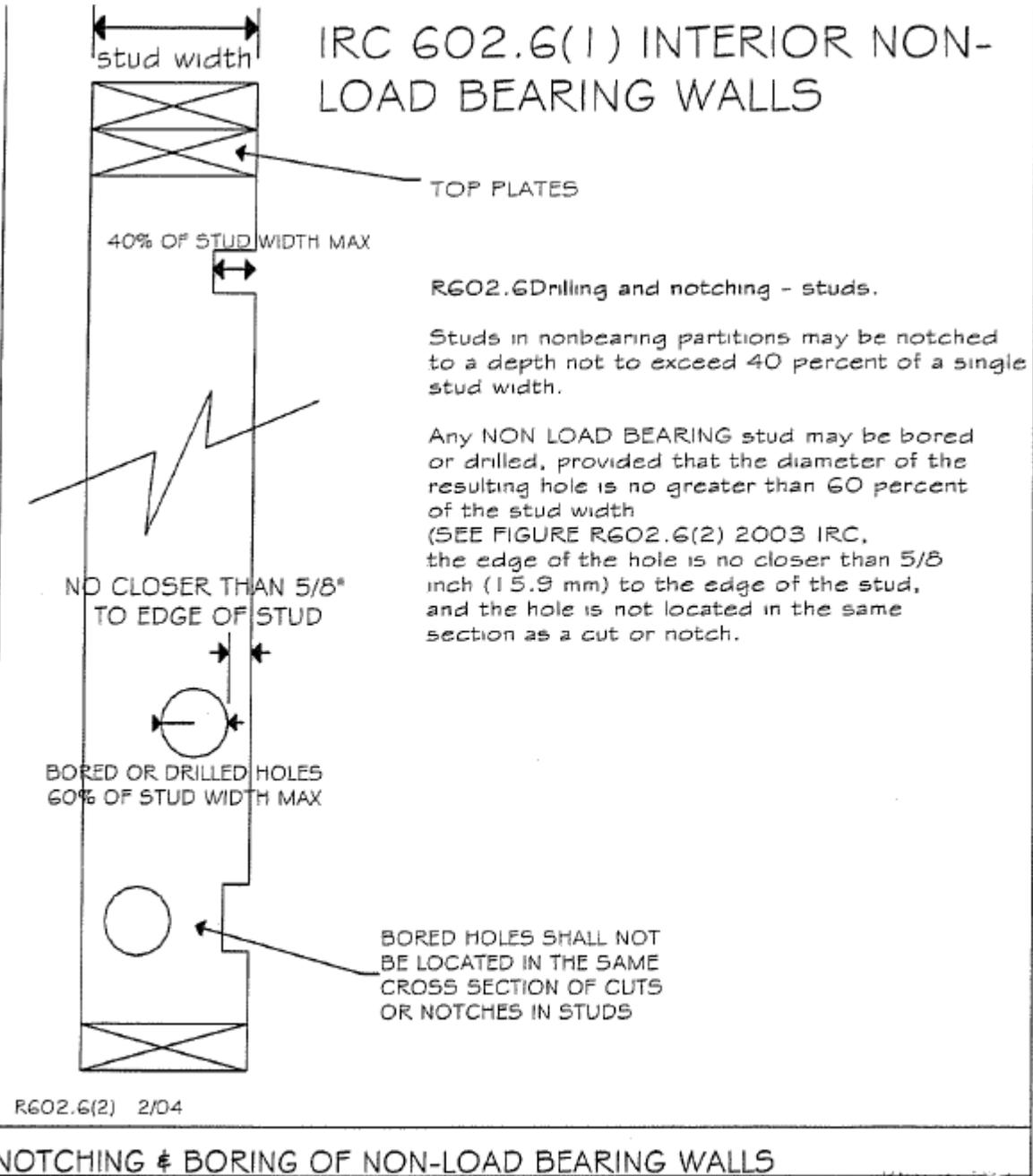
**Exceptions:**

1. A stud may be bored to a diameter not exceeding 60 percent of its width, provided that such studs located in exterior walls or bearing partitions are doubled and that not more than two successive studs are bored.
2. Approved stud shoes may be used when installed in accordance with the manufacturer's recommendation.

R602.6(1) 2/04

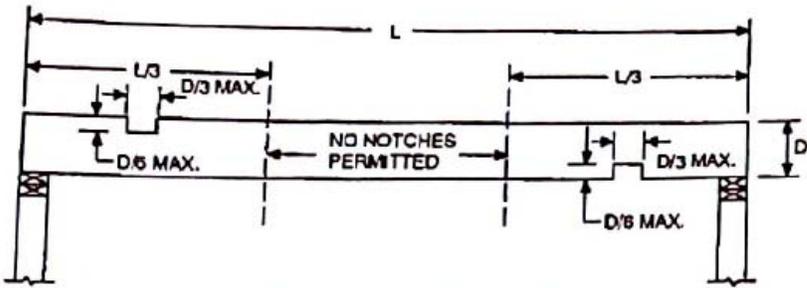
## NOTCHING & BORING OF LOAD BEARING WALLS

**Please Note: Any holes bored closer than 1 1/4" to edge of stud, must be protected by a Nail Plate**

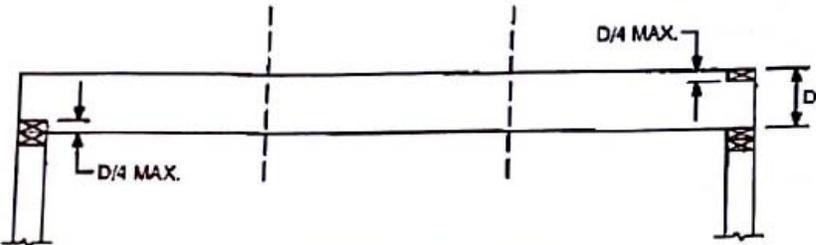


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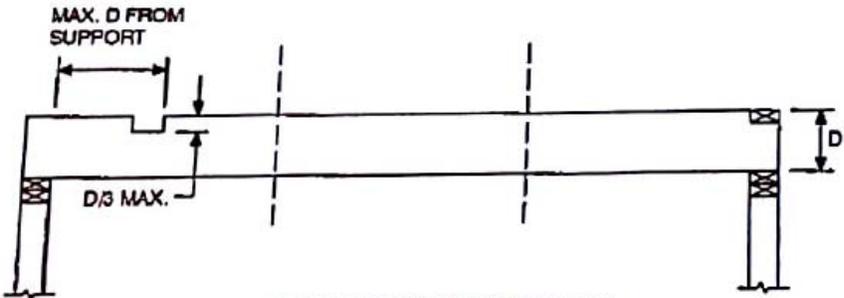
# JOISTS & RAFTERS



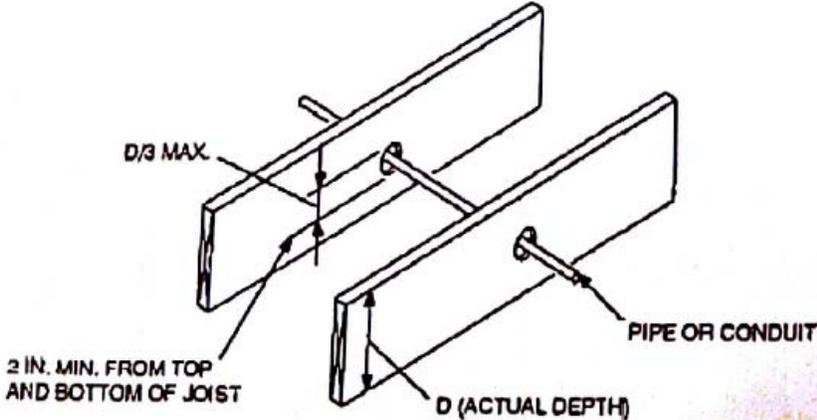
FLOOR JOIST—CENTER CUTS



FLOOR JOIST—END CUTS



RAFTER/CEILING JOISTS (R802.7.1)



## SECTION R313 SMOKE ALARMS

**[F] R313.1 Smoke alarms.** Smoke alarms shall be installed in the following locations:

1. In each sleeping room.
2. Outside each separate sleeping area in the immediate vicinity of the bedrooms.
3. 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.

When more than one smoke alarm is required to be installed within an individual dwelling unit the alarm devices shall be interconnected in such a manner that the actuation of one alarm will activate all of the alarms in the individual unit. The alarm shall be clearly audible in all bedrooms over background noise levels with all intervening doors closed.

All smoke alarms shall be listed and installed in accordance with the provisions of this code and the household fire warning equipment provisions of NFPA 72.

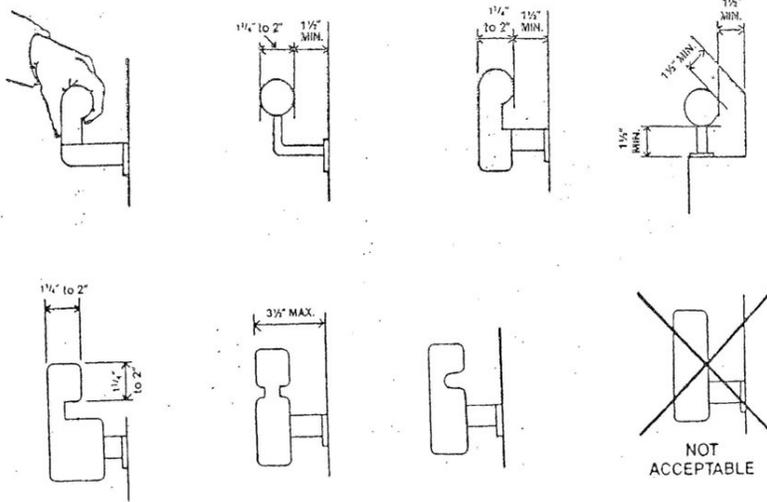
**[EB] R313.1.1 Alterations, repairs and additions.** When interior alterations, repairs or additions requiring a permit occur, or when one or more sleeping rooms are added or created in existing dwellings, the individual dwelling unit shall be provided with smoke alarms located as required for new dwellings; the smoke alarms shall be interconnected and hard wired.

### Exceptions:

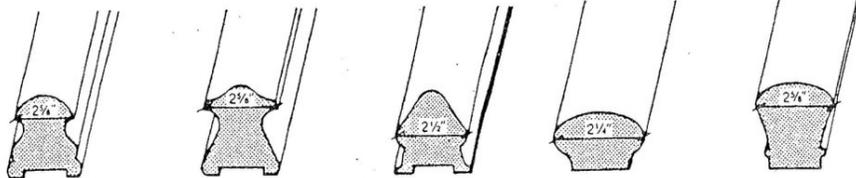
1. Smoke alarms in existing areas shall not be required to be interconnected and hard wired where the alterations or repairs do not result in the removal of interior wall or ceiling finishes exposing the structure, unless there is an attic, crawl space, or basement available which could provide access for hard wiring and interconnection without the removal of interior finishes.
2. Repairs to the exterior surfaces of dwellings are exempt from the requirements of this section.

**[F] R313.2 Power source.** In new construction, the required smoke alarms shall receive their primary power from the building wiring when such wiring is served from a commercial source, and when primary power is interrupted, shall receive power from a battery. Wiring shall be permanent and without a disconnecting switch other than those required for overcurrent protection. Smoke alarms shall be permitted to be battery operated when installed in buildings without commercial power or in buildings that undergo alterations, repairs or additions regulated by Section R313.1.1.

# Handrails



NOTE:  
OTHER SHAPES MAY BE ACCEPTABLE  
IF THEY PROVIDE AN EQUIVALENT  
GRIPPING SERVICE. SEE THIRD  
PARAGRAPH OF SECTION 1006.9.



For SI: 1 inch = 25.4 mm.