

DEPARTMENT OF COMMUNITY DEVELOPMENT

BUILDING GUIDELINES

Residential one and two-family dwellings and their Accessory Buildings

The following items are required by the 2015 Edition International Building Code and 2015 Edition International Residential Code, which have been adopted for use by the City of Sedalia. This information, when obtained prior to construction, helps to avoid problems for both the City and the owner and makes compliance with the codes easier.

BUILDING PERMIT APPLICATION

- I. General Information
 - a. Legal description (verifiable by deed or survey), and street address or other shorthand location identifier.
 - b. Valuation (total cost of project).
 - c. Owners, contractors, and designer's names and phone number.
 - d. Proposed use of structure(s) and number of living units per structure.
- II. Plans one (1) set (Architect/Engineer stamp not required) as allowed by relevant laws and approved by Building Official.

Be of sufficient clarity to indicate the nature and extent of the work proposed and show in detail that it will be in accordance with the building codes and relevant laws, ordinances, rules and regulations.

Computations, stress diagrams and other data sufficient to show the correctness of the plan shall be submitted when required by the Building Official.

- III. Plan Review – plan sheet for new residential construction shall include the following:
 1. Zoning;
 2. Lot & block number of the parcel;
 3. Dimensions of the plot and the north point;
 4. Location, dimensions, and type of house and other accessory buildings;
 5. Locations of and dimensions of easements and established set back requirements, if any;
 6. Elevations at the following points (foundation contractor can usually supply this information):
 - a. First floor;

- b. Finished curb
- c. Other elevations that may be necessary to show grading and proper drainage.

The review plan may be a sketch plan and does not have to be professionally prepared in most cases.

- IV. The following are exempted work under the International Residential Code, which does not require a building permit:
 - a. Exemption from the permit requirements of this code shall not be deemed to grant authorization for any work to be done in any manner in violation of the provisions of this code or any other law ordinances of this jurisdiction.

BUILDING:

- 1. One-story detached accessory structures, provided the floor area does not exceed 200 square feet.
- 2. Fences not over 7 feet high.
- 3. Retaining walls that are not over 4 feet in height measured from the bottom of the footing to the top of the wall, unless supporting a surcharge.
- 4. Water tanks supported directly up-on grade if the capacity does not exceed 5,000 gallons and the ratio of height to diameter or width does not exceed 2 to 1.
- 5. Sidewalks and driveways not more than 30 inches above adjacent grade and not over any basement or story below.
- 6. Painting, papering, tiling, carpeting, cabinets, counter tops and similar finish work.
- 7. Prefabricated swimming pools that are less than 24 inches deep.
- 8. Swings and other playground equipment accessory to a one- or two-family dwelling.
- 9. Window awnings supported by an exterior wall.

ELECTRICAL:

Repairs and maintenance. A permit shall be not be required for minor repair work, including the replacement of lamps or the connect of approved portable electrical equipment to approved permanently installed receptacles.

DECKS: Decks not exceeding 200 square feet, and not more than 30" above grade.

GAS:

- 1. Portable heating, cooking or clothes drying appliances.
- 2. Replacement of any minor part that does not alter approval of equipment or make such equipment unsafe.

MECHANICAL:

- 1. Portable heating appliances.
- 2. Portable ventilation appliances.
- 3. Portable cooling unit.
- 4. Steam, hot or chilled water piping within any heating or cooling equipment regulated by this code.
- 5. Replacement of any minor part that does not alter approval of equipment or make such equipment unsafe.

6. Portable evaporative cooler.
7. Self-contained refrigeration systems containing 10 pounds or less of refrigerant or that are actuated by motors of 1 horsepower or less.

PLUMBING:

The stopping of leaks in drains, water, soil, waste or vent pipe; provided, however, that if any concealed trap, drainpipe, water, soil, waste or vent pipe becomes defective and it becomes necessary to remove and replace the same with new material, such work shall be considered as new work and a permit shall be obtained and inspection made as provided in this code.

The clearing of stoppages or the repairing of leaks in pipes, valves or fixtures, and the removal and reinstallation of water closets, provided such repairs do not involve or require the replacement of valves, pipes or fixtures.

Unless otherwise exempted, separate plumbing, electrical and mechanical permits will be required for the above exempted items.

Exemption from the permit requirements of this code shall not be deemed to grant authorization for any work to be done in any manner in violation of the provisions of this code or any other laws or ordinances of this jurisdiction.

- V. The following is a list of codes that are in use:
 - a. 2015 International Building Code
 - b. 2015 International Residential Code
 - c. 2015 International Plumbing Code
 - d. 2015 International Fuel Gas Code
 - e. 2015 International Mechanical Code
 - f. 2014 National Electrical Code
 - g. Existing Building Code

VI. Fees

Building Permit – \$25.00 for first thousand dollars plus \$6.00 for each one-thousand dollars or fraction thereof.

Electrical, plumbing, mechanical, and excavation fees will also be due based on the detail of your construction.

Schedule of Electrical Fees

Basic fee - each permit	\$25.00
Receptacle drop or fixture – each	1.00
Circuit – each	1.00
Motors and generators:	
Motors up to and including ¼ horsepower - each	1.00
Motors over ¼ horsepower - each	1.00
Generators used for lighting or power, including switchboard - each	1.00
Motor generators for charging or picture machines - each	1.00
Transformers – over 30 KVA - each	15.00
Ceiling fans – each	1.00
Emergency or Exit Lights - each	1.00
Electric ranges and heating devices - each	5.00
Services	
Temporary - each	25.00
Up to 200 amperes	25.00
From 201 to 1,000 amperes	40.00
1,001 or higher amperes	100.00

SECTION E3902 ARC-FAULT CIRCUIT – INTERRUPTER PROTECTION

E3902.15 Location of arc-fault circuit interrupter – Arc-fault circuit interrupter shall be installed in readily assessable locations.

E3902.16 Arc-fault circuit-interrupter protection – Branch circuits that supply 120-volt, single-phase, 15- and 20 ampere branch circuits supplying outlets shall be installed in kitchens, family rooms, dining rooms, living rooms, parlors, libraries, dens, bedrooms, sunrooms, recreation rooms, closets, hallways, laundry areas, or similar rooms or areas shall be protected.

Schedule of Plumbing and Fuel Gas Fees

The applicant under this division shall pay for each permit issued at the time of issuance, a fee in accordance with the following schedule, and at the rate provided for each classification shown herein:

Basic Fee - each permit	\$ 25.00
Fixture or trap, or set of fixtures on one trap (including water, drainage piping and backflow prevention devices - each	5.00
Building sewer - each	20.00
Rainwater systems – per drain inside building	5.00
Water heater or vent - each	5.00
Gas piping system:	
Up to four outlets	5.00
Each outlets over four	1.00
Industrial waste pre-treatment interceptor, with trap vent (except kitchen type grease interceptors coining as fixture traps) - each	5.00
Water piping, water conditioning equipment, or water treatment - each installation, alteration or repair	5.00
Draining or vent piping – each alteration or repair	5.00
Lawn sprinkler system on any one meter, including backflow protection devices – each	5.00
Vacuum breakers or backflow protective devices, including any water piping:	
Up to four breakers or devices	5.00
Each breaker or devices over four	1.00

Schedule of Excavation Fees

Street	275.00
Alley	200.00
Sewer Connection Fee	100.00

These permits can be obtained through Public Works Department

Residential Mechanical Permit Fees

The applicant under this division shall pay for each permit issued at the time of issuance, a fee in accordance with the following schedule and at the rate provided for each classification shown herein:

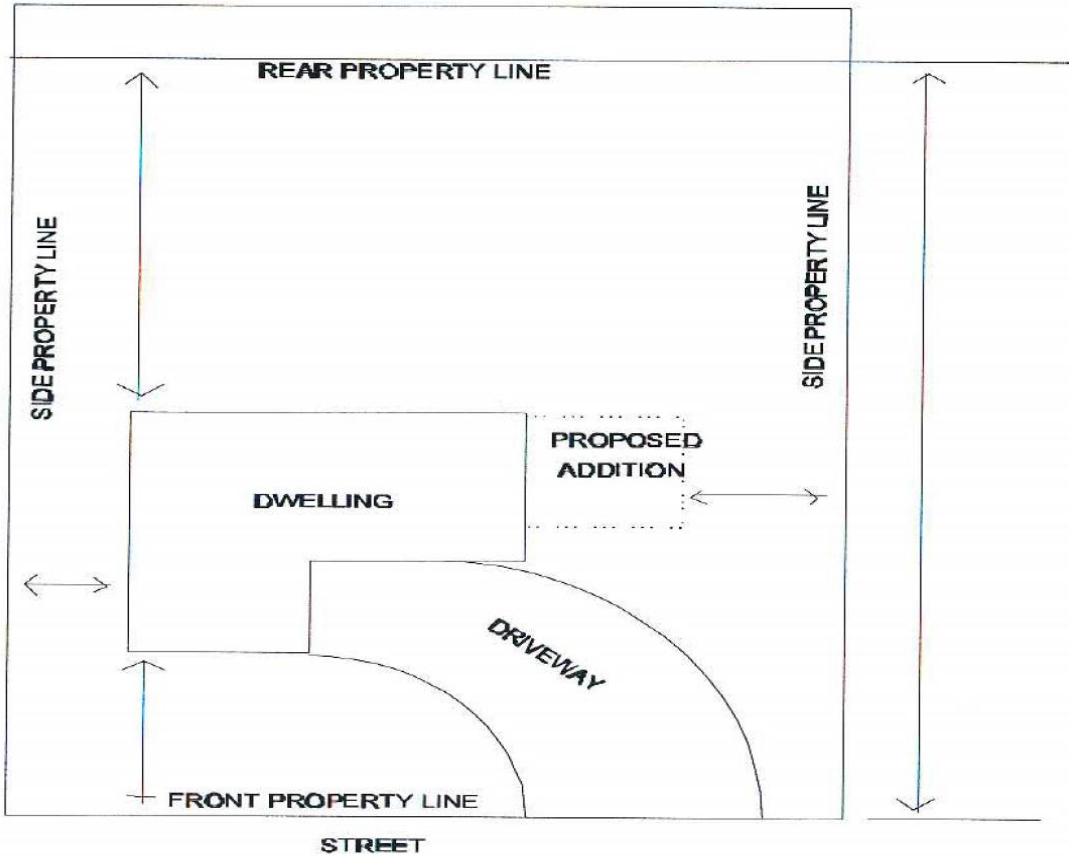
Buildings containing one and two-family detached dwellings and their accessory structures.

Basic Fee	\$ 30.00
Additions to basic permit fees:	
Furnace unit – Each	\$ 15.00
Air-cooling unit – Each	\$ 15.00
Including ducts and vents attached to such appliance	

Commercial Mechanical Permit Fees

(Valuation shall include total value of work, including materials and labor)

Total Valuation	Fee
Basic Fee	\$ 50.00
Up to \$10,000	\$ 45.00
\$10,001.00 to \$200,000.00	\$ 150.00
\$200,001.00 to \$500,000.00	\$ 800.00
Over \$500,001.00	\$ 2,000.00



TYPICAL PLOT PLAN

ONE AND TWO FAMILY DWELLING CONSTRUCTION UNDER THE I.R.C AND I.B.C.

FOUNDATION, RETAINING WALLS AND DRAINAGE

FOUNDATIONS

All exterior walls and interior bearing walls shall be supported on masonry, concrete or treated wood footings and foundations which are of sufficient size to support safely the loads imposed as determined from the character of the soil and shall extend below frost line. Foundation walls shall extend at least eight (8) inches above the finished grade adjacent to the wall at all points. Foundation plates or sills shall be bolted to the foundation or foundation wall with not less than 1/2 inch nominal diameter bolts embedded at least seven (7) inches into concrete and spaced not more than six (6) feet apart. Bolts should be located within twelve (12) inches of each of each piece.

When expansive soils are present, the building official may require that special provisions be made in the foundation design and construction to safeguard against damage due to the expansiveness. He may require a special investigation and report to provide this design and construction criteria.

Foundation plates or sills shall be of any specifics of wood pressure treated with an approved preservative, or foundation grade redwood, all marked or branded by an approved agency.

Foundations for all buildings where the surface of the ground slopes more than one (1) foot in ten (10) feet shall be level or shall be stepped so that both top and bottom of such foundation are level.

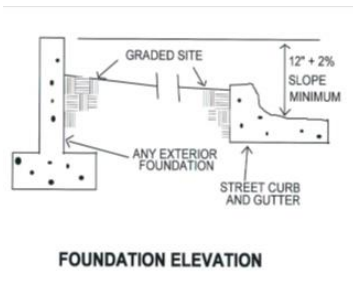
RETAINING WALLS

Walls retaining earth are required to be designed for the loads specified in the International Building Code.

DRAINAGE

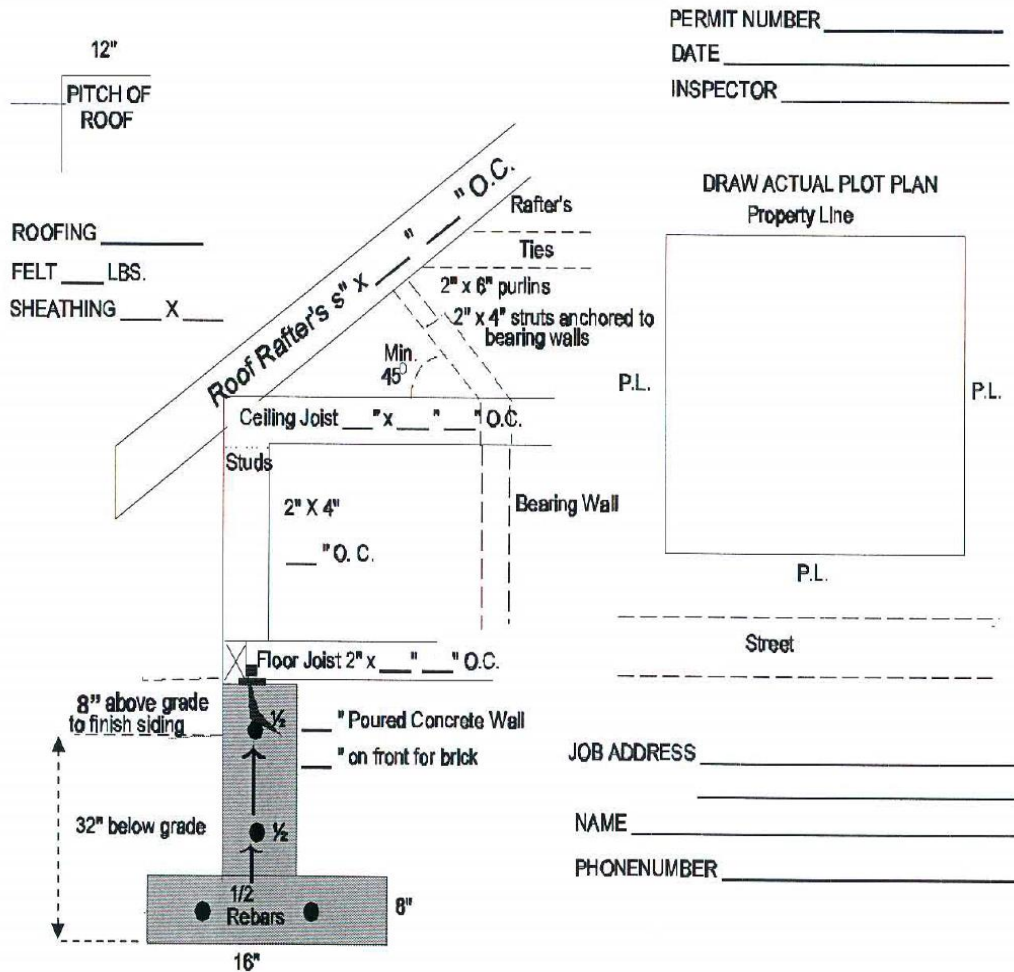
Provisions shall be made for the control and drainage of surface water around buildings.

NOTE: Building official may approve alternate elevations if required drainage is provided.

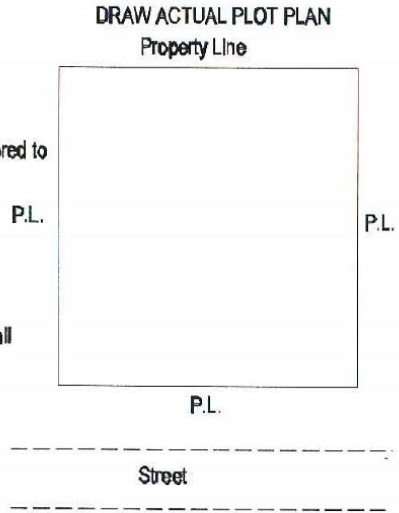


EXAMPLE ONLY. BUILDING AND CITY CODES APPLY.

CONCRETE WORK



PERMIT NUMBER _____
 DATE _____
 INSPECTOR _____



JOB ADDRESS _____
 NAME _____
 PHONENUMBER _____

FOOTINGS AND FOUNDATIONS

For standard crawl space or basement foundation, use 8" x 16" footing and 8" concrete wall.

Footing rebar needs to be chaired and tied in place. Wall rebar to be tied in place.

Plates, sills and sleepers resting on concrete to be treated lumber or redwood bolted to foundation with not less than 1/2" diameter bolts embedded at least 7" into concrete, spaced within 12" of corners and spaced not more than 6' apart. Nuts and washers to be installed and tight.

Section 1809.5 General of the I.B.C. is amended to read as follows: (adding to the first paragraph) "Footings and foundations, unless otherwise specifically provided, shall be constructed of masonry or concrete and shall in all cases extend not less than thirty-two (32) inches below finished grade. Foundations supporting wood shall extend at least eight (8) inches above the finish grade adjacent to the foundation wall at all points.

Additional paragraphs as follows:

"Footings shall be reinforced with a minimum of two (2) No. 4 half-inch steel bars tied in place, laid horizontal with a minimum of three (3) inches exposure to earth. Footing shall be keywayed.

"Foundation walls shall be reinforced with a minimum of one (1) No. 4 steel rod around perimeter with first rod to be located a minimum of six (6) inches and a maximum of ten (10) inches from bottom with remainder horizontal rods located twenty-four (24) inches off center. All rods to be tied in place."

I.B.C. Section 1809.7 Concrete footings exception, is amended by deleting reference to table 1809.7 and by adding the following: "The minimum requirements for single story stud bearing walls using a spread footing and wall design shall be a footing sixteen (16) inches wide and eight (8) inches thick and reinforced with a minimum of two (2) No. 4 half-inch steel bars tied in place, laid horizontal with a minimum of three (3) inches exposure to earth. Footing shall be keywayed. The foundation wall shall be a minimum of eight (8) inch width of wall and reinforced with a minimum of one (1) No. 4 steel rod around perimeter with first rod to be located a minimum of six (6) inches and a maximum of ten (10) inches from bottom with remainder horizontal rods located twenty-four (24) inches off center. All rods to be tied in place."

Slab-on-ground with turned down footing foundations for single story stud bearing walls shall be a minimum of twelve (12) inch trench footing extended not less than thirty-two (32) inches below finish grade with a minimum of one (1) No. 4 steel rod around perimeter with first rod to be located a minimum of six (6) inches and maximum of ten (10) inches from bottom with remainder horizontal rods located twenty-four (24) inches off center. All rods to be tied in place. Additional vertical No. 4 rods shall be located at top of trench footing spaced every forty-eight (48) inches extending into trench footing a minimum of twenty-four (24) inches and bent to extend into concrete slab (floor) a minimum of twenty-four (24) inches. All foundations supporting wood shall extend at least eight (8) inches above the finished grade adjacent to the foundation wall at all points. Alternate design may be submitted as designed by a registered design professional.

Single story private garages with stud bearing walls which are accessory structures to residential dwellings shall have a minimum combination footing and foundation consisting of six (6) inch trench footing extended not less than thirty-two (32) inches below finish grade with a minimum of one (1) No. 4 steel rod around perimeter with first rod to be located a minimum of six (6) inches and a maximum of ten (10) inches from bottom with remainder horizontal rods located twenty-four (24) inches off center. All rods to be tied in place. Combination footing and foundation wall may be topped with not less than four (4) inches of concrete. Floor with

finished height of foundation wall including concrete floor if topped shall be not less than eight (8) inches above finished grade adjacent to the foundation wall at all points.

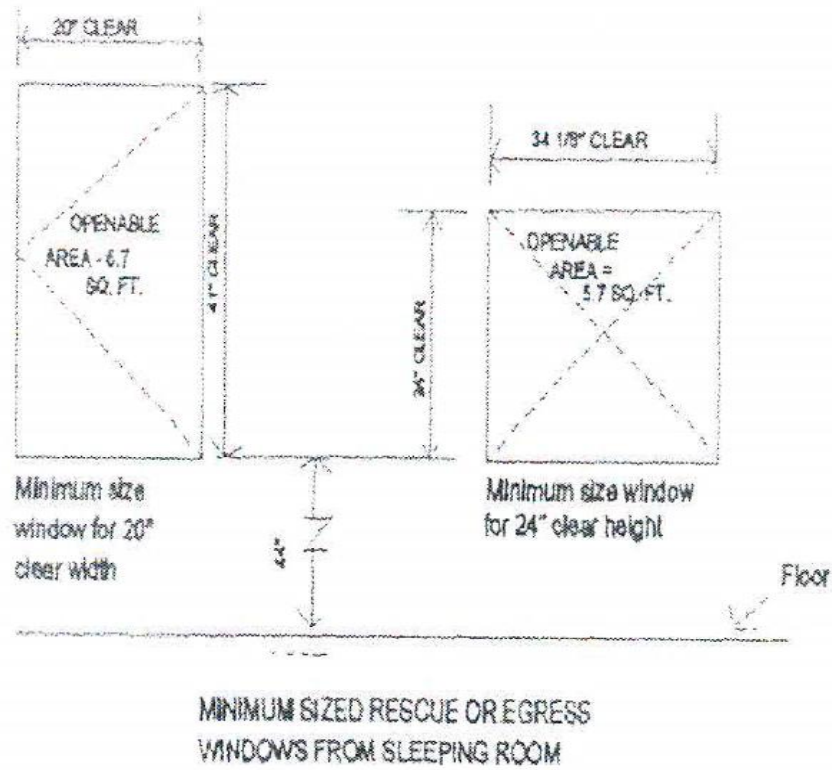
EXIT AND EMERGENCY ESCAPES

In dwelling units, basements with habitable space and every sleeping room shall have at least one (1) operable window or door approved for emergency escape or rescue with shall be directly into a public street, public alley, yard or exit court. The units shall be operable from the inside to provide a full clear opening without the use of separate tools.

All escape or rescue windows shall have a minimum net clear openable area of 5.7 square feet. Grade floor openings shall have a minimum net clear opening of five (5) square feet. The minimum net clear openable height dimension shall be 24 inches. The minimum net clear openable width dimension shall be 20 inches. When windows are provided as a means of escape or rescue they shall have a finished sill height not more than 44 inches above the floor.

Bars, grills, grates or similar devices may be installed on an emergency escape or rescue windows or doors, provided such devices are equipped with approved release mechanisms which are openable from the inside without the use of a key or special knowledge or effort.

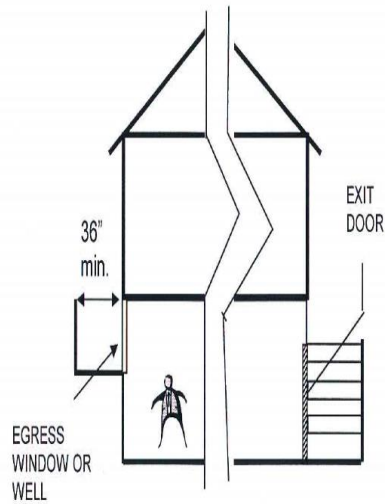
I.R.C. sets forth three (3) minimum parameters which must be satisfied. First, a minimum net clear area of 5.7 square feet shall be provided. Second, a net clear opening height of 24 inches shall be provided. Third, a net clear opening width of 20 inches shall be provided. All three (3) minimums must be satisfied. See Figure No. 1 for a graphical representation of these requirements.



The I.R.C. requires an exterior exit or an emergency egress window from basements with habitable space in dwelling units, no matter what the use of the basement is or planned to be used for.

This requirement will not affect the requirement for sleeping rooms which are located in the basement. Sleeping rooms still require an exterior exit or emergency egress window directly from the room.

EXITS AND EMERGENCY ESCAPES



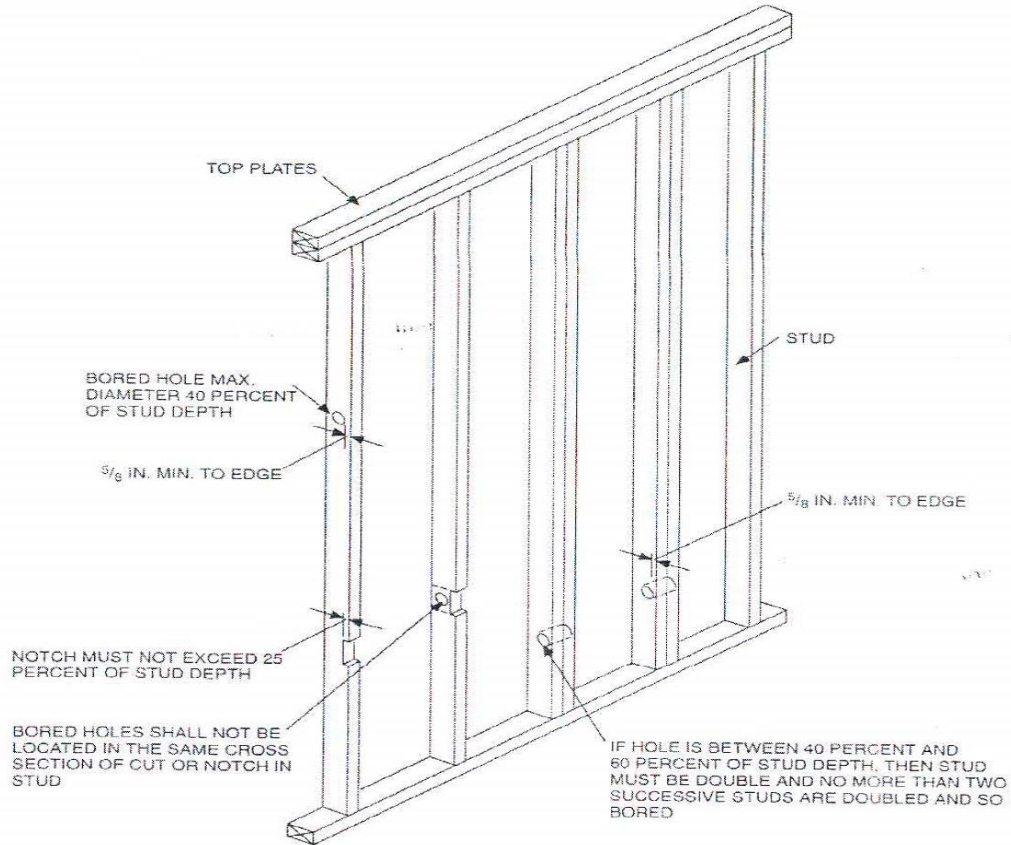
The horizontal dimensions of the window well shall provide a minimum net clear area of nine (9) square feet with a minimum horizontal projection and width of 36 inches.

Window wells with a vertical depth greater than 44 inches below the adjacent ground level shall be equipped with a permanently affixed ladder or steps as per I.R.C.

WALL CONSTRUCTION

WALL CONSTRUCTION

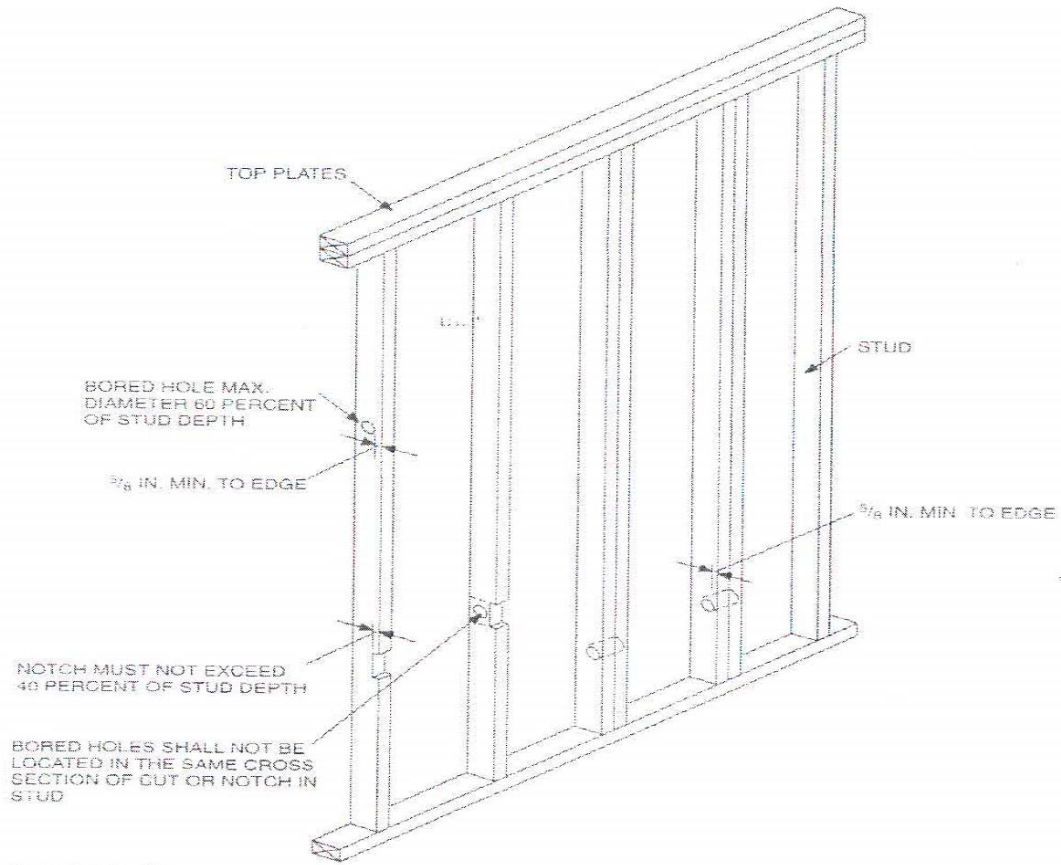
FIGURE R602.6(1)



For SI: 1 inch = 25.4 mm.

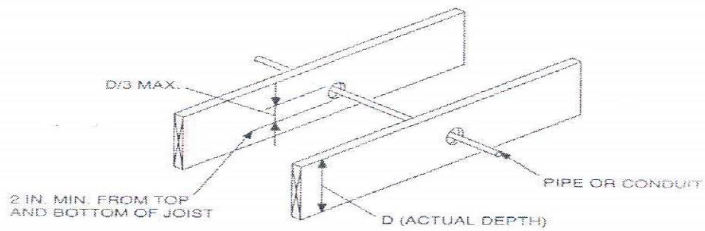
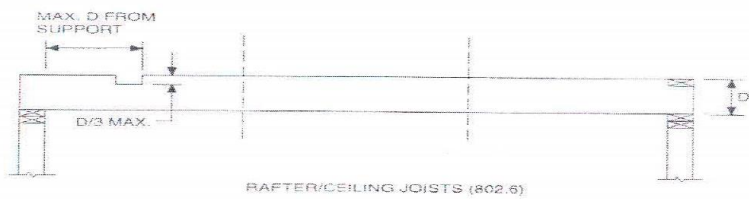
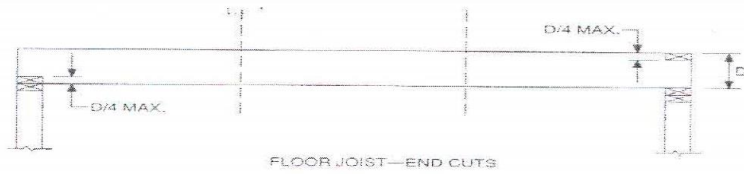
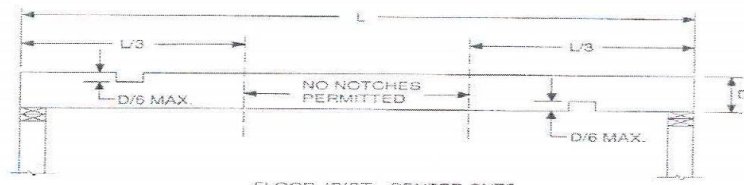
Note: Condition for exterior and bearing walls.

FIGURE R602.6(1)
NOTCHING AND BORED HOLE LIMITATIONS FOR EXTERIOR WALLS AND BEARING WALLS



For SI: 1 inch = 25.4 mm.

FIGURE R602.6(2)
NOTCHING AND BORED HOLE LIMITATIONS FOR INTERIOR NONBEARING WALLS



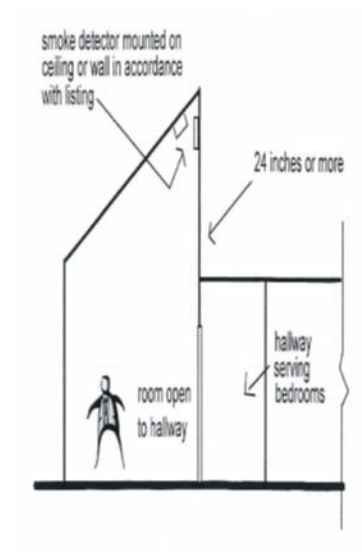
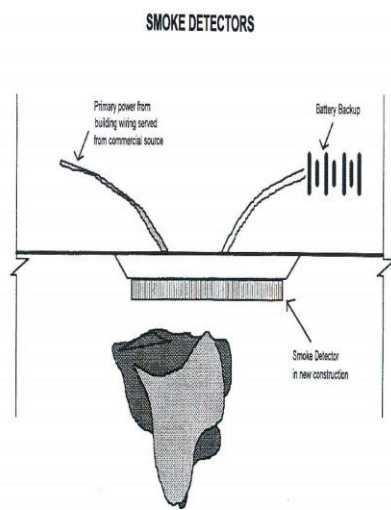
For SI: 1 inch = 25.4 mm.

FIGURE R502.8
CUTTING, NOTCHING AND DRILLING

SMOKE DETECTORS

LOCATION WITHIN DWELLING UNITS. In dwelling units, a detector shall be installed in each sleeping room and at a point centrally located in the corridor or area giving access to each separate sleeping area. When the dwelling unit has more than one (1) story and in dwellings with basements, a detector shall be installed on each story and in the basement. In dwelling units where a story or basement is split into two (2) or more levels, the smoke detector shall be installed on the upper level, except that when the lower level contains a sleeping area, a detector shall be placed at the ceiling of the upper level in close proximity to the stairway. In dwelling units where the ceiling height of a room open to the hallway serving the bedrooms exceeds that of the hallway by 24 inches or more, smoke detectors shall be installed in the hallway and in the adjacent room. Detectors shall sound an alarm audible in all sleeping areas of the dwelling unit in which they are located. All smoke alarms shall be listed and installed in accordance with this code and NFPA 72.

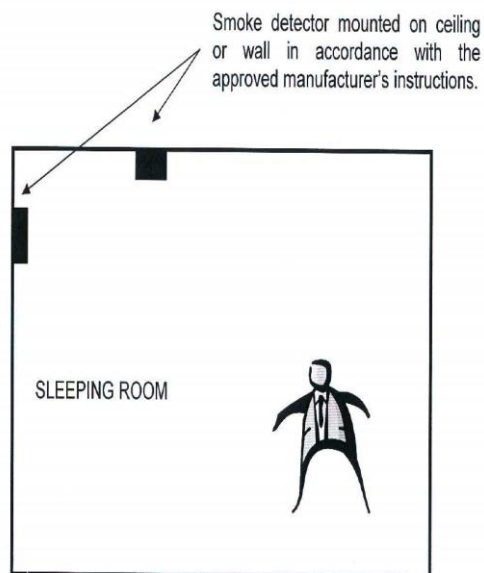
Smoke detectors are required within each sleeping room of a dwelling unit. The detectors placed in sleeping rooms are in addition to those required in other locations. Placing smoke detectors within each room will provide early warning that occupants of the room need when a fire begins within the sleeping room. The installation of smoke detectors on each story will substantially improve the chances of escape for sleeping occupants. Smoke detectors are required on all floor levels and must be audible in every sleeping area. The basement is not exempted if the stairway does not open into the dwelling.



Since the high ceilings of living rooms, dining rooms, entries and other space adjacent to hallways will act as a reservoir for smoke and gases, a smoke detector will be required when the ceiling height exceeds that of the hallway by 24 inches or more. This “reservoir” can cause a delay in warning the occupants and leads to increased temperatures and reduced time for exiting once a warning is given.

The smoke detectors in the high ceiling area are in addition to the detectors which are required in the hallway giving access to the sleeping area.

As with all detectors, wall-mounted detectors shall be installed in accordance with the approved manufacturer’s instructions



Smoke detectors shall be required in existing buildings of Group R occupancies.

- Where any addition, alteration or repair requires a permit except repairs to exterior surfaces; or
- Additional sleeping room added or created

ROOFING

Field identification of each truss is required. Information branded, marked or otherwise permanently affixed to each truss shall contain the following information:

1. Identity of the company manufacturing the truss;
2. The design dead load and live load, wind load and snow load;
3. The truss spacing, as required to carry this load;
4. Light metal-plate connected wood truss identification

Submit engineered design sheet stamped by Missouri Licensed Professional Engineer before installing trusses.

ROOF COVERINGS

GENERAL

The roof coverings specified below are permissible for dwellings.

In areas subject to roof ice buildup, underlayment consisting of two (2) layers of Type 15 felt applied shingle fashion shall be installed and solid mopped together with approved cementing material between the piles extended from the eave up to the roof to a point 24 inches inside the exterior wall line of the building.

ASPHALT SHINGLES

All asphalt shingles for roof shall bear the label of an approved testing laboratory having a service for the inspection of material and finished products during manufacture.

Asphalt shingles shall be fasted according to manufacturer's instructions to solidly sheathed roofs, but not less than four (4) nails per each strip shingle not more than nominal 36 inches wide, and (2) two nails per each individual shingle less than 18 inches wide shall be used.

Underlayment of not less than one (1) Type 15 felt, lapped horizontally and vertically so as to shed water, shall be applied under all asphalt shingles.

Shingles shall not be installed on a roof having a slope less than four (4) inches in 12 inches except that asphalt shingles may be installed on slopes as low as two (2) inches in 12 inches, provided the shingles are approved self-sealing or are hand-sealed and are installed with an underlayment consisting of two (2) layers of Type 15 felt applied shingle fashion.

SECTION 905 REQUIREMENTS FOR ROOF COVERINGS

METAL -

R905.10 Metal roof panels. The installation of metal roof panels shall comply with the provisions of this section.

R905.10.1 Deck requirements. Metal roof panel roof coverings shall be applied to solid or spaced sheathing, except where the roof covering is specifically designed to be applied to spaced supports.

R905.10.2 Slope. Minimum slopes for metal roof panels shall comply with the following:

1. The minimum slope for lapped, non-soldered-seam metal roofs without applied lap sealant shall be three units vertical in 12 units horizontal (25-percent slope).
2. The minimum slope for lapped, non-soldered-seam metal roofs with applied lap sealant shall be one-half unit vertical in 12 units horizontal (4-percent slope). Lap sealants shall be applied in accordance with the *approved* manufacturer's installation instructions.
3. The minimum slope for standing-seam roof systems shall be one-quarter unit vertical in 12 units horizontal (2-percent slope).

R905.10.3 Material standards. Metal-sheet roof covering systems that incorporate supporting structural members shall be designed in accordance with the *International Building Code*. Metal-sheet roof coverings installed over structural decking shall comply with Table R905.10.3(1). The materials used for metal-sheet roof coverings shall be naturally corrosion resistant or provided with corrosion resistance in accordance with the standards and minimum thicknesses shown in Table R905.10.3(2).

R905.10.4 Attachment. Metal roof panels shall be secured to the supports in accordance with this chapter and the manufacturer's installation instructions. In the absence of manufacturer's installation instructions, the following fasteners shall be used:

1. Galvanized fasteners shall be used for steel roofs.
2. Copper, brass, bronze, copper alloy and 300-series stainless steel fasteners shall be used for copper roofs.
3. Stainless steel fasteners are acceptable for metal roofs.

R905.10.5 Underlayment. Underlayment shall comply with Section R905.1.1.

ASPHALT -

R905.2 Asphalt shingles. The installation of asphalt shingles shall comply with the provisions of this section.

R905.2.1 Sheathing requirements. Asphalt shingles shall be fastened to solidly sheathed decks.

R905.2.2 Slope. Asphalt shingles shall be used only on roof slopes of two units vertical in 12 units horizontal (2:12) or greater. For roof slopes from two units vertical in 12 units horizontal (2:12) up to four units vertical in 12 units horizontal (4:12), double underlayment application is required in accordance with Section R905.1.1.

R905.2.3 Underlayment. Underlayment shall comply with Section R905.1.1.

R905.2.4 Asphalt shingles. Asphalt shingles shall comply with ASTM D 3462.

R905.2.4.1 Wind resistance of asphalt shingles. Asphalt shingles shall be tested in accordance with ASTM D 7158. Asphalt shingles shall meet the classification requirements of Table R905.2.4.1 for the appropriate ultimate design wind speed. Asphalt shingle packaging shall bear a label to indicate compliance with ASTM D 7158 and the required classification in Table R905.2.4.1.

Exception: Asphalt shingles not included in the scope of ASTM D 7158 shall be tested and labeled to indicate compliance with ASTM D 3161 and the required classification in Table R905.2.4.1.

R905.2.5 Fasteners. Fasteners for asphalt shingles shall be galvanized steel, stainless steel, aluminum or copper roofing nails, minimum 12-gage [0.105 inch (3 mm)] shank with a minimum 3/8-inch-diameter (9.5 mm) head, complying with ASTM F 1667, of a length to penetrate through the roofing materials and not less than 3/4 inch (19.1 mm) into the roof sheathing. Where the roof sheathing is less than 3/4 inch (19.1 mm) thick, the fasteners shall penetrate through the sheathing.

R905.2.6 Attachment. Asphalt shingles shall have the minimum number of fasteners required by the manufacturer, but not less than four fasteners per strip shingle or two fasteners per individual shingle. Where the roof slope exceeds 21 units vertical in 12 units horizontal (21:12, 175-percent slope), shingles shall be installed as required by the manufacturer.

R905.2.7 Ice barrier. Where required, ice barriers shall comply with Section R905.1.2.

R905.2.8 Flashing. Flashing for asphalt shingles shall comply with this section.

R905.2.8.1 Base and cap flashing. Base and cap flashing shall be installed in accordance with manufacturer's instructions. Base flashing shall be of either corrosion resistant metal of minimum nominal 0.019-inch (0.5 mm) thickness or mineral-surfaced roll roofing weighing not less than 77 pounds per 100 square feet (4 kg/m²). Cap flashing shall be corrosion-resistant metal of minimum nominal 0.019-inch (0.5 mm) thickness.

R905.2.8.2 Valleys. Valley linings shall be installed in accordance with the manufacturer's instructions before applying shingles. Valley linings of the following types shall be permitted:

1. For open valleys (valley lining exposed) lined with metal, the valley lining shall be not less than 24 inches (610 mm) wide and of any of the corrosion-resistant metals in Table R905.2.8.2.

2. For open valleys, valley lining of two plies of mineral-surfaced roll roofing, complying with ASTM D 3909 or ASTM D 6380 Class M, shall be permitted. The bottom layer shall be 18 inches (457 mm) and the top layer not less than 36 inches (914 mm) wide.

3. For closed valleys (valley covered with shingles), valley lining of one ply of smooth roll roofing complying with ASTM D 6380 and not less than 36 inches wide (914 mm) or valley lining as described in Item 1 or 2 shall be permitted. Self-adhering polymer modified bitumen underlayment complying with ASTM D 1970 shall be permitted in lieu of the lining material.

R905.2.8.3 Sidewall flashing. Base flashing against a vertical sidewall shall be continuous or step flashing and shall be not less than 4 inches (102 mm) in height and 4 inches (102 mm) in width and shall direct water away from the vertical sidewall onto the roof or into the gutter. Where siding is provided on the vertical sidewall, the vertical leg of the flashing shall be continuous under the siding. Where anchored masonry veneer is provided on the vertical sidewall, the base flashing shall be provided in accordance with this section and counterflashing shall be provided in accordance with Section R703.7.2.2. Where exterior plaster or adhered masonry veneer is provided on the vertical sidewall, the base flashing shall be provided in accordance with this section and Section R703.6.3.

R905.2.8.4 Other flashing. Flashing against a vertical front wall, as well as soil stack, vent pipe and chimney flashing, shall be applied in accordance with the asphalt shingle manufacturer's printed instructions.

R905.2.8.5 Drip edge. A drip edge shall be provided at eaves and rake edges of shingle roofs. Adjacent segments of drip edge shall be overlapped not less than 2 inches (51 mm). Drip edges shall extend not less than 1/4 inch (6.4 mm) below the roof sheathing and extend up

back onto the roof deck not less than 2 inches (51 mm). Drip edges shall be mechanically fastened to the roof deck at not more than 12 inches (305 mm) o.c. with fasteners as specified in Section R905.2.5. Underlayment shall be installed over the drip edge along eaves and under the underlayment along rake edges.

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SECTION R908 REROOFING

R908.1 General. Materials and methods of application used for re-covering or replacing an existing roof covering shall comply with the requirements of Chapter 9.

Exceptions:

1. Reroofing shall not be required to meet the minimum design slope requirement of one-quarter unit vertical in 12 units horizontal (2-percent slope) in Section R905 for roofs that provide positive roof drainage.
2. For roofs that provide positive drainage, re-covering or replacing an existing roof covering shall not require the secondary (emergency overflow) drains or scuppers of Section R903.4.1 to be added to an existing roof.

R908.2 Structural and construction loads. The structural roof components shall be capable of supporting the roof covering system and the material and equipment loads that will be encountered during installation of the roof covering system.

R908.3 Roof replacement. Roof replacement shall include the removal of existing layers of roof coverings down to the roof deck.

Exception: Where the existing roof assembly includes an ice barrier membrane that is adhered to the roof deck, the existing ice barrier membrane shall be permitted to remain in place and covered with an additional layer of ice barrier membrane in accordance with Section R905.

R908.3.1 Roof re-cover. The installation of a new roof covering over an existing roof covering shall be permitted where any of the following conditions occur:

1. Where the new roof covering is installed in accordance with the roof covering manufacturer's approved instructions
2. Complete and separate roofing systems, such as standing-seam metal roof systems, that are designed to transmit the roof loads directly to the building's structural system and do not rely on existing roofs and roof coverings for support, shall not require the removal of existing roof coverings.
3. Metal panel, metal shingle and concrete and clay tile roof coverings shall be permitted to be installed over existing wood shake roofs where applied in accordance with Section R908.4.
4. The application of a new protective coating over an existing spray polyurethane foam roofing system shall be permitted without tear-off of existing roof coverings.

R908.3.1.1 A *roof re-cover* shall not be permitted where any of the following conditions occur:

1. Where the existing roof or roof covering is water soaked or has deteriorated to the point that the existing roof or roof covering is not adequate as a base for additional roofing.
2. Where the existing roof covering is slate, clay, cement or asbestos-cement tile.

3. Where the existing roof has two or more applications of any type of roof covering.

R908.4 Roof re-covering. Where the application of a new roof covering over wood shingle or shake roofs creates a combustible concealed space, the entire existing surface shall be covered with gypsum board, mineral fiber, glass fiber or other *approved* materials securely fastened in place.

R908.5 Reinstallation of materials. Existing slate, clay or cement tile shall be permitted for reinstallation, except that damaged, cracked or broken slate or tile shall not be reinstalled. Any existing flashings, edgings, outlets, vents or similar devices that are a part of the assembly shall be replaced where rusted, damaged or deteriorated. Aggregate surfacing materials shall not be reinstalled.

R908.6 Flashings. Flashings shall be reconstructed in accordance with *approved* manufacturer's installation instructions. Metal flashing to which bituminous materials are to be adhered shall be primed prior to installation.

GUARDS

Guards required: Porches, balconies, aisles, stairs, ramps or raised floor surfaces located more than 30 inches above the floor or grade below shall have guards not less than 36 inches in height. Open sides of stairs with a total rise of more than 30 inches above the floor or grade below shall have guards not less than 34 inches in height measured vertically from the nosing of the treads.

Guard opening limitations: Required guards on open sides of stairways, raised floor areas, balconies, porches, aisles, stairs and ramps shall have intermediate rails or ornamental closures that do not allow passage of a sphere four (4) inches in diameter. Required guards shall not be constructed with horizontal rails or other ornamental pattern that results in a ladder effect.

Exception: The triangular openings at the open sides of a stair, formed by the riser, tread and bottom rail of a guard at the open side of a stairway are permitted to be of such a size that a sphere six (6) inches cannot pass through.

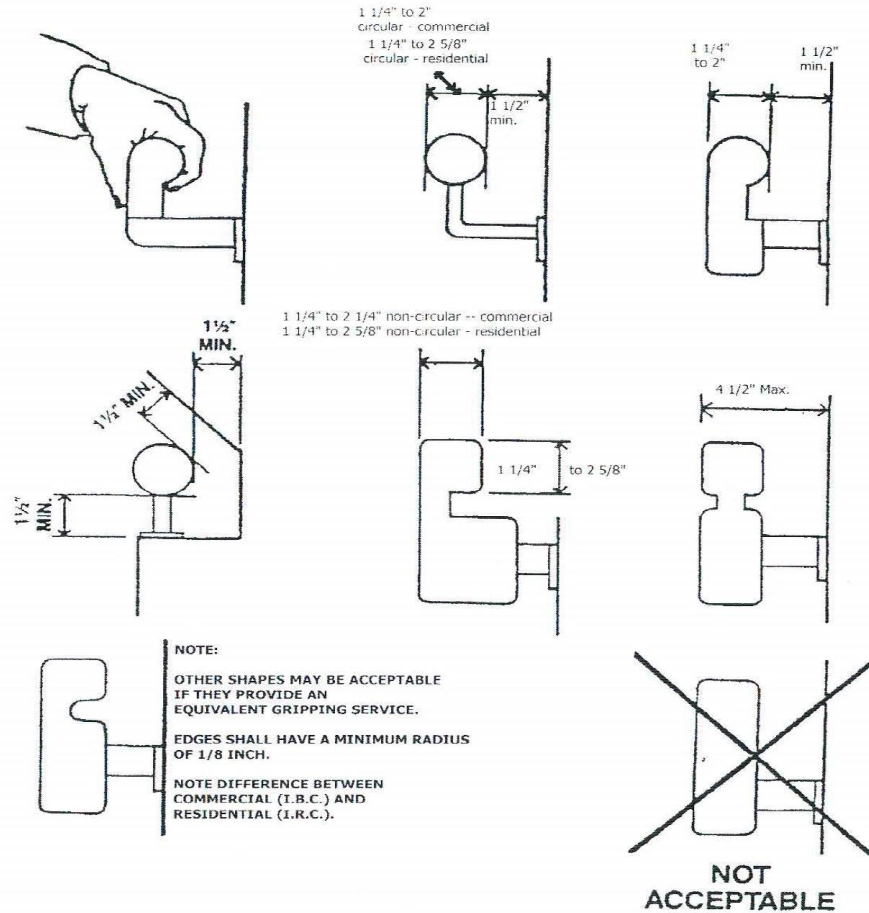
HANDRAILS

Handrails: Handrails having minimum and maximum height of 34 inches and 38 inches, respectively, measured vertically from the nosing of the treads, shall be provided on at least one (1) side of stairways. All required handrails shall be continuous the full length of the stairs with four (4) or more risers from a point directly above the top rise of a flight to a point directly above the lowest riser of the flight. Ends shall be returned or shall terminate in newel posts or safety terminals. Handrails adjacent to a wall shall have a space of not less than 1.5 inches between the wall and the handrail.

Exception: Handrails shall be permitted to be interrupted by a newel post or landing at a turn. The use of a volute, turnout, starting newel or starting easing shall be allowed over the lowest tread.

Handrail grip side: The handgrip portion of handrails shall have a circular cross section of 1 ¼ inches minimum to two (2) inches maximum. Other handrail shapes that provide an equivalent grasping surface are permissible. Edges shall have a minimum radius of ¼ inch.

ACCEPTABLE HANDRAIL DETAILS



ALL OTHER UTILITIES

Sewer, water, gas, telephone and television cable service are available at most locations within the city limits of Sedalia. However, it is the responsibility of the developer of land to insure the obtainability of all utilities.