

Site Planning Guide for Residential Occupancies based upon The 2006 International Fire Code as Adopted by the City of Arvada and the Arvada Fire Protection District

This site planning guide for residential occupancies is based upon the 2006 International Fire Code, as amended and adopted by the City of Arvada and the Arvada Fire Protection District. This site planning guide for residential occupancies is based upon the 2006 International Fire Code and the 2006 International Residential Code. Residential occupancies include for site planning purposes one and two family dwellings and town homes as classified by the International Residential Code as Group R, Division 3 Occupancies. This guide is prepared for use within the City of Arvada that is within the boundaries of the Arvada Fire Protection District. This information is intended to be used as a guide for site planning purposes. This guide is not designed or intended to be inclusive of all code requirements. Additional requirements based upon the International Fire Code as amended, may be addressed upon the submittal and review of site plans by the Life Safety Division.

Street Signs:

Streets and roads shall be identified with approved signs. Temporary signs shall be installed at each street intersection when construction of new roadways allows passage by vehicles. Signs shall be of an approved size, weather resistant and be maintained until replaced by permanent signs. Street signs, temporary or permanent shall be installed prior to above grade construction.
IFC 06 505.2.

Private Street Signs:

Street signs for private streets are not provided by the City of Arvada. The installation of street signs shall be the responsibility of the developer. Street signs shall meet the requirements of the Model Traffic code. The street sign design shall be approved by the Life Safety Division prior to installation.
IFC 06 505.2.

Building Address Numbers:

New buildings shall have approved address numbers, building numbers or approved building identification placed upon the building in a position that is plainly legible and visual from the street or roadway fronting the property. The address numbers shall contrast in their background. Address numbers shall be Arabic numerals or alphabet letters. Address or building identification numbers shall be a minimum height of not less than four (4) inches, and with a minimum stroke width of not less than 0.5 inches.

IFC 06 505.1.

When address numbers are placed on buildings that are provided from alleys or private streets from the main street frontage, address signs and or address numbers shall be posted at the entrance to the alley or private street. The address signs shall be approved by the Life Safety Division prior to installation.

IFC 06 505.1.

Fire Apparatus Access Roads:

Approved fire apparatus access roads shall be provided for every facility, building or portion of a building hereafter constructed or moved into the Arvada Fire Protection District. The fire apparatus access road shall comply with the requirements of the fire code and shall extend to within one-hundred-fifty (150) feet of all portions of the exterior wall of the first story of the building as measured by an approved route around the exterior of the building or facility.

IFC 06 503.1.1.

Exception: The fire marshal or designated representative is authorized to increase the dimension of one-hundred-fifty (150) feet where:

1. The building is provided throughout with an approved automatic sprinkler system installed in accordance with the fire code.
2. Fire apparatus access roads cannot be installed because of location on property, topography, waterways, nonnegotiable grades or other similar conditions, and an approved alternative means of fire protection is provided.

3. There are not more than two Group R-3 or Group U occupancies.

Additional Access:

The fire marshal is authorized to require more than one fire apparatus access road based upon the potential for impairment of a single road by vehicle congestion, condition of terrain, climatic conditions or other factors that could limit access. IFC 06 503.1.2.

One or Two Family Residential Developments:

Developments of one or two family dwellings where the number of dwelling units exceeds thirty (30) shall be provided with separate and approved fire apparatus access roads and shall meet the requirements of Section D104.3.

IFC 06 Appendix D107.1

Exceptions:

1. Where there are more than thirty (30) dwelling units on a single public or private fire apparatus access road and all dwellings are equipped throughout with an approved automatic sprinkler system in accordance with Section 903.3.1.1, 903.3.1.2 or 903.3.1.3.3. Access from two (2) directions shall not be required.
2. The number of dwelling units on a single fire apparatus access road shall not be increased unless fire apparatus access roads will connect with future development, as determined by the fire marshal.

Remoteness:

Where two (2) access roads are required, they shall be placed a distance apart equal to not less than one half (1/2) of the length of the maximum overall diagonal dimension of the property or area to be served, measured in a straight line between accesses. IFC 06 Appendix D104.3.

Dedication of Fire Apparatus Access Roads:

Fire apparatus access roads such as, but not limited to, private streets and alleys shall be dedicated on the Final Plat as “Emergency Access Lanes” or language that is acceptable to the Attorney’s Office of the City of Arvada.

Private Street and Alley Widths:

Fire apparatus access roads that are private streets or alleys shall have a minimum unobstructed width of twenty-six (26) feet.

IFC 06 503.2.1. Amended.

Exception:

The width of private streets may be reduced from the required twenty-six (26) feet if a specific access and parking design is approved by the fire marshal. The resulting street width shall not be less than twenty-four (24) feet of unobstructed width.

IFC 06 503.2.1. Amended.

Vertical Clearance:

An unobstructed vertical clearance of not less than thirteen (13) feet, six (6) inches shall be provided and maintained.

IFC 06 503.2.1.

Authority:

The fire marshal shall have the authority to require an increase in the minimum access widths where they are inadequate for fire or rescue operations.

IFC 06 503.2.2.

Surface:

Fire apparatus access roads shall be designed and maintained to support the imposed loads of eighty-five-thousand (85,000) pound fire apparatus and shall be surfaced with the first lift of asphalt to provide all-weather driving capabilities, and shall be installed prior to above grade construction.

IFC 06 503.2.3. Amended.

Grass-crete, Ritter Rings or similar landscape treatments that will prevent a fire apparatus access road from being maintainable as an all-weather surface and immediately discernable, shall be prohibited.

IFC 06 503.2.3. Amended.

Turning Radius:

The required turning radius for fire apparatus shall be a minimum of forty-seven (47) feet, four (4) inch outside radius. The inside radius shall be a minimum of twenty-six (26) feet, four (4) inches with an eight (8) foot three (3) inch foot bumper overhang.
IFC 06 503.2.4.

Copies of approved turning radius templates are available from the Life Safety Division upon request or at our web site www.arvadafire.com.

Dead End Fire Apparatus Access Roads:

Dead end fire apparatus access roads in excess of one-hundred-fifty (150) feet in length shall be provided with an approved area for the turning around of fire apparatus.
IFC 06 503.2.5.

Dead End Fire Apparatus Access Roads in Group R, Division 3 Occupancies:

Where a property is a Group R, Division 3 occupancy, the length of a dead end fire apparatus access road may be increased to one-hundred-seventy-five (175) feet without the provision for the turning around of fire apparatus, if approved by the fire marshal.
IFC 06 503.2.5.1. Amended.

Bridges and Elevated Surfaces:

Where a bridge or elevated surface is part of a fire apparatus access road, the bridge shall be constructed and maintained in accordance with AASHITO HB-17 and City of Arvada Engineering Standards. Bridges and surfaces shall be designed for a live load of a minimum of eighty-five-thousand (85,000) pound fire apparatus. Vehicle load limits shall be posted at both entrances to bridges. Where elevated surfaces which are

not designed as for use of fire apparatus, approved barriers or signs shall be installed and maintained.
IFC 06 503.2.6.

Fire Apparatus Access Road Grades:

The grade of fire apparatus access roads shall not exceed City of Arvada Engineering and Arvada Fire Protection District Standards.
IFC 06 503.2.7.

Marking of Fire Apparatus Access Roads:

“No Parking Fire Lane” signs shall be installed on each side of fire apparatus access roads, private streets or alleys to identify such roads and to prohibit parking. The maximum spacing between signs shall not exceed one-hundred-thirty-five (135) feet. “No Parking Fire Lane” signs shall meet the requirements set forth within the City of Arvada Engineering Division Standards.

A copy of City of Arvada approved signs is available on request from the Life Safety Division.
IFC 06 503.3.

Curbs:

Vertical curbs shall not be placed at the entrance of or within fire access lanes or roads. Mountable curbs and gutter may be used, if approved by the fire marshal.
IFC 06 503.2.8. Amended.

Gated Communities:

Gated communities may be permitted providing the community meets the following requirements detailed herein and is subject to the approval of the fire marshal. The fire apparatus access roads within a gated community shall be a minimum of twenty-eight (28) feet of unobstructed width.
IFC 06 503.2.9. Amended.

Exception. Street widths may be reduced to twenty-six (26) feet and fire hydrant

spacing may be increased to five-hundred (500) feet when each individual dwelling unit within the gated community meeting the requirements of a Group R-3 Occupancy as defined by the International Residential Code is provided with an approved NFPA 13-D Residential Sprinkler System as approved by the fire marshal.

Fire apparatus access roads shall be maintained as an all-weather surface and shall meet the requirements set forth in Section 503 of the fire code.
IFC 06 503.2.9 Amended.

The unobstructed vertical clearance for fire apparatus access roads shall not be less than thirteen (13) feet six (6) inches.
IFC 06 503.2.9. Amended.

Two (2) separate means of ingress and egress shall be provided into the site.
IFC 06 503.2.9. Amended.

Gates shall be staffed on a twenty-four (24) hour basis or be equipped with an automatic and manual system approved by the fire marshal.
IFC 06 503.2.9. Amended.

Water Supplies and Fire Hydrants for Fire Protection:

Water lines and fire hydrants shall be installed, operational and capable of providing the minimum required fire flow for the building sites prior to above grade construction.
IFC 06 508.5.1.

Water lines shall be installed and looped in accordance with City of Arvada Engineering Standards or Water District of jurisdiction standards.

Minimum Required Fire Flow:

The minimum required fire flow for one and two family dwellings are calculated from the City of Arvada Engineering Fire Flow table and is based upon separation between structures.

15 feet or greater between units: 1,500 gallons per minute.

14 feet 11 inches to 5 feet between units: 2,000 gallons per minute.

Less than 5 feet between units: 2,500 gallons per minute.

A copy of the City of Arvada Fire Flow table is available on request from the Life Safety Division.

Fire Flow Test Information:

Fire flow test information may be obtained from the Life Safety Division. Fire flow tests are usually completed within ten (10) working days, unless conflicts or weather conditions arise in scheduling tests with the Water Transmission and Distribution Division of the City of Arvada, Water District of jurisdiction or the Life Safety Division.

Fire Hydrant Spacing:

Group R-3 and Group U Occupancies with streets having a thirty-two (32) foot flow line to flow line in width or larger:

Fire hydrants shall be spaced at maximum distance of five-hundred (500) feet between units.

Group R-3 and Group U Occupancies with streets having less than a thirty-two (32) foot flow line to flow line in width:

Fire hydrants shall be spaced at a maximum distance of three-hundred (300) feet between units.

IFC 06 508.5.1. Exception 2.2 Exception 2.3 Amended.

Fire hydrant locations shall be approved by the City of Arvada Engineering Division or Water District of jurisdiction and the Life Safety Division.

IFC 06 508.5.1.

Fire Hydrants and Installation:

Fire hydrants shall be painted yellow or other colors as approved by the City of

Arvada Water Transmission and Distribution Division, or Water District of jurisdiction.

IFC 06 508.5.7 Amended.

Fire hydrants shall be installed in such a manor that the four and one half (4-1/2) inch discharge nozzle on the fire hydrant is a minimum of eighteen (18) inches above finished grade in accordance with City of Arvada Engineering Division or Water District of jurisdiction standards.

Fire hydrant discharge nozzle threads shall be National Treads in accordance with City of Arvada Engineering Division Standards or Water District of jurisdiction.

Landscaping/Fencing/Obstructions:

Obstructions:

Posts, fences, vehicles, growth, trash storage, mail kiosks, transformers or other materials or objects shall not be placed or kept near fire hydrants that would prevent such equipment from being immediately discernable.

IFC 06 508.5.4.

Clear Space Around Fire Hydrants:

A minimum of a three (3) foot clear space shall be provided and maintained around the circumference of fire hydrants.

IFC 06 508.5.5.

Trash Enclosures:

Trash enclosures for community pick-up or community buildings shall be of non-combustible construction including gates or doors.

IFC 06 304.2.1. Amended.