



SITE PLANNING GUIDE

FOR RESIDENTIAL OCCUPANCIES

Division of Fire Prevention



WHEAT RIDGE FIRE PROTECTION DISTRICT

DOING THE RIGHT THINGS AT THE RIGHT TIMES FOR THE RIGHT REASONS

3880 Upham Street Wheat Ridge, Colorado 80033 • ph.303.403.5900 • www.wrfire.org



Table of Contents

General Information	2
Signage	2
- <i>Private Street Signs</i>	2
- <i>Building Address Numbers</i>	2
Fire Apparatus Access Roads	3
- <i>Additional Access</i>	3
- <i>One or Two Family Residential Developments</i>	3
- <i>Remoteness</i>	3
- <i>Private Street and Alley Widths</i>	4
- <i>Vertical Clearances</i>	4
- <i>Authority</i>	4
- <i>Surface</i>	4
- <i>Dead End Fire Apparatus Access Roads</i>	4
- <i>Turning Radius</i>	5
- <i>Dead End Fire Access Roads- R-3 Occupancies</i>	5
- <i>Bridges and Elevated Surfaces</i>	5
- <i>Fire Apparatus Access Road Grades</i>	5
- <i>Curbs</i>	5
- <i>Marking of Fire Apparatus Access Roads</i>	6
Water Supply and Fire Flow	6
- <i>Minimum Required Fire Flow</i>	6
- <i>Fire Flow Test Information</i>	6
Fire Hydrant Spacing	6
Fire Hydrants and Installation	7
Landscaping/Fencing/Obstructions	7

General Information

This site planning guide for residential occupancies is based upon the 2006 International Fire Code and the 2006 International Residential Code as amended and adopted by the City of Wheat Ridge and the Wheat Ridge Fire Protection District. For site plan purposes, residential occupancies include one and two family dwellings and townhomes as classified by the International Residential Code and by the International Building Code as Group R, Division 3 Occupancies. This guide has been prepared for use within the City of Wheat Ridge and within the boundaries of the Wheat Ridge Fire Protection District. This information is intended to be used as a guide for site planning purposes and is not intended to be inclusive of all code requirements. Additional requirements based upon the International Fire Code as amended may be applicable once a site plan submittal has been reviewed by the Division of Fire Prevention.

Signage

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 Wheat Ridge. 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 Division of Fire Prevention 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 with 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 accessed from alleys or private streets away 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 Division of Fire Prevention 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 Wheat Ridge 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 30 shall be provided with separate and approved fire apparatus access roads and shall meet the requirements of Section D104.3. (IFC 06 D107.1)

Exceptions:

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

Remoteness. Where two access roads are required, they shall be placed a distance apart equal to not less than one half 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 D104.3)

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:

1. 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 (20) 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)

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)

**TABLE D103.4
REQUIREMENTS FOR DEAD-END FIRE
APPARATUS ACCESS ROADS**

LENGTH (feet)	WIDTH (feet)	TURNAROUNDS REQUIRED
0-150	20	None required
151-500	20	120-foot Hammerhead, 60-foot "Y" or 96-foot-diameter cul-de-sac in accordance with Figure D103.1
501-750	26	120-foot Hammerhead, 60-foot "Y" or 96-foot-diameter cul-de-sac in accordance with Figure D103.1
Over 750		Special approval required

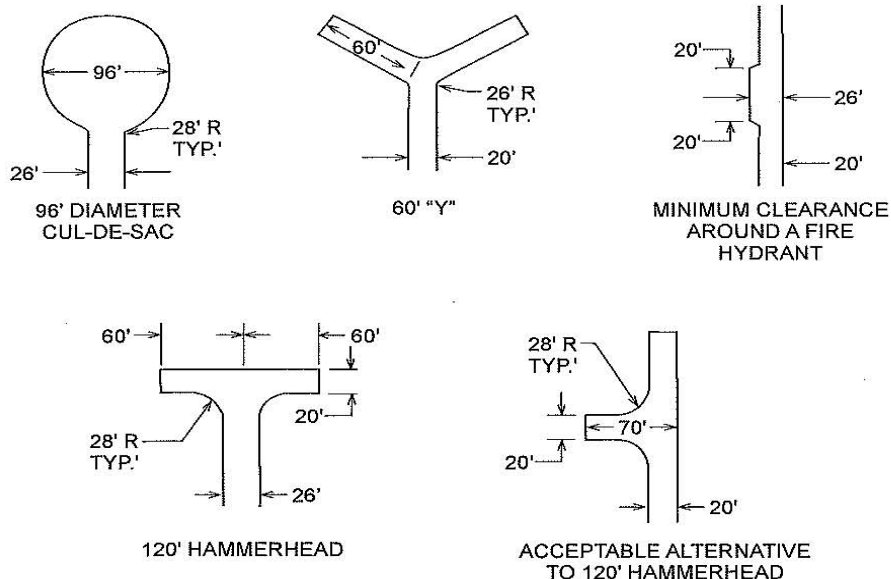


FIGURE D103.1
DEAD-END FIRE APPARATUS ACCESS ROAD TURNAROUND

Turning Radius. The required turning radius for fire apparatus shall be a minimum of forty-seven feet-four inches (47) feet four (4) inches outside radius and twenty six (26) feet six (6) inches inside radius with a four (4) foot bumper overhang. (IFC 06 503.2.4)

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 Wheat Ridge 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 Wheat Ridge Engineering and Wheat Ridge Fire Protection District Standards. (IFC 06 503.2.7)

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)

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 135 feet. “No Parking Fire Lane” signs shall meet the requirements as set forth as required by the City of Wheat Ridge. (IFC 06 503.3)

Water Supply and Fire Flow

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 the Water District of jurisdiction standards.

Minimum Required Fire Flow. The minimum required fire flow for one and two family dwellings are calculated from the International Fire Code and shall not be less than 1,000 gallons per minute for fire flow calculations for one and two family dwellings up to 3,600 square feet. Fire flow calculations for buildings in excess of 3,600 square feet shall be in accordance with Table B 105.1. (IFC 06 Appendix B)

A copy of table B 105.1 is available from the Division of Fire Prevention upon request.

Fire Flow Test Information. Fire flow test information may be obtained from the Division of Fire Prevention of the Wheat Ridge Fire Protection District. Fire flow tests are usually completed within ten (10) working days, unless conflicts or weather conditions arise in scheduling tests with the Water District of jurisdiction or the Division of Fire Prevention.

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:

1. 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:

1. Fire hydrants shall be spaced at a maximum distance of three hundred (300) feet between units. (IFC 06 508.5.1. Exceptions 2.2, Exception 2.3 Amended)
2. Fire hydrant locations shall be approved by the Water District of jurisdiction and the Division of Fire Prevention. (IFC 06 508.5.1)

Fire Hydrants and Installation

Fire hydrants shall be painted colors as approved by the Water District of jurisdiction. (IFC 06 508.5.7 Amended)

Fire hydrants shall be installed in such a manner 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 the Water District of jurisdiction standards.

Fire hydrant discharge nozzle threads shall be in accordance with the Water District of jurisdiction standards.

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)