

**Fire Line Requirements**  
**(Includes all amendments and ordinances)**

**CONTROLLED ACCESS GATE.** A device located on public or private property which controls or restricts access by motor vehicles or persons or both. The term includes, but is not limited to, metal or wooden swing railings, metal or wooden rolling or sliding railings and drop arm type railings extending across public or private streets or fire lanes whether manually operated or motorized.

**LIGHT DUTY METAL CHAIN.** A chain with metal links no larger than ¼-inch in diameter. This term does not include high test proof coil chains or other heat tempered chains of any size.

**OWNER.** A natural person, corporation, partnership, association or any other similar entity who has care, custody or control of the premises.

**MAIN GATE.** A security gate located on public or private property where more than one security gate exists and which has been designated in writing by the owner to the police department, fire department and code enforcement as the main access to the property.

**APPROVED PADLOCK.** A Knox padlock which has been dual keyed for the Irving Fire and Police Departments.

**SECTION 503 FIRE APPARATUS ACCESS ROADS**

**503.1 Where required.** Fire apparatus access roads shall be provided and maintained in accordance with Sections 503.1.1 through 503.1.3.

**503.1.1 Buildings and facilities.** Approved fire apparatus access roads shall be provided for every facility, building or portion of a building hereafter constructed or moved into or within the jurisdiction. The fire apparatus access road shall comply with the requirements of this section and shall extend to within 150 feet of all portions of the facility and 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. Except for single- or two-family residences, the path of measurement shall be along a minimum of a 10 foot wide unobstructed pathway around the external walls of the structure. The owner of the building or facility shall submit an 8-½" x 11" site plan showing the fire lanes and foot print of the building to the fire department for approval prior to permits being issued for the building or facility. Approved fire lane site plans shall be kept on file with the fire department. Any fire lane that has been established prior to the adoption of this code, or that was established by separate ordinance or approval of a fire lane site plan, is a fire lane for all intents and purposes and shall be maintained as required by this code, whether or not it meets the minimum requirements of a fire lane. In addition, the chief may designate a fire lane when the ingress or egress of a new or existing piece of property is not adequate for fire department apparatus.

**Exception:** The fire code official is authorized to increase the dimension of 150 feet where:

1. The building is equipped throughout with an approved automatic sprinkler system installed in accordance with Section 903.3.1.1, 903.3.1.2 or 903.3.1.3.
2. Fire apparatus access roads cannot be installed due to location on property, topography, waterways, non-negotiable 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.

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

**503.1.3 High-piled storage.** Fire department vehicle access to buildings used for high-piled combustible storage shall comply with the applicable provisions of Chapter 23.

**503.2 Specifications.** Fire apparatus access roads shall be installed and arranged in accordance with Sections 503.2.1 through 503.2.8 and Appendix D, as amended.

**503.2.1 Dimensions.** Fire apparatus access roads shall have an unobstructed width of not less than 24 feet (7315 mm), except for approved security gates in accordance with Section 503.6, and an unobstructed vertical clearance of not less than 14 feet (4267 mm).

**503.2.2 Authority.** The fire code official shall have the authority to require an increase in the minimum access widths where they are inadequate for fire or rescue operations.

**503.2.3 Surface.** Fire apparatus access roads shall be designed and maintained to support the imposed loads of fire apparatus and shall be surfaced so as to provide all-weather driving capabilities.

**503.2.4 Turning radius.** The required turning radius of fire apparatus access road shall be determined by the fire code official.

**503.2.5 Dead ends.** Dead-end fire apparatus access roads excess of 150 feet (45 720 mm) in length shall be provided with an approved area for turning around fire apparatus.

**503.2.6 Bridges and elevated surfaces.** Where a bridge an elevated surface is part of a fire apparatus access road, the bridge shall be constructed and maintained in accordance with AASHTO Standard Specification for Highway Bridges. Bridges and elevated surfaces shall be designed for a live load sufficient to carry the imposed loads of fire apparatus. Vehicle load limits shall be posted at both entrances bridges when required by the fire code official. Where elevated surfaces designed for emergency vehicle use are adjacent to surfaces which are not designed for such use, approved barriers, approved signs or both shall be installed and maintained when required by the fire code official.

**503.2.7 Grade.** The grade of the fire apparatus access road shall be within the limits established by the fire code official based on the fire department's apparatus.

**503.3 Marking.** Approved striping or, when allowed by the fire code official, signs, or both, shall be provided for fire apparatus access roads to identify such roads or prohibit the obstruction thereof. Signs and striping shall be maintained in a clean and legible condition at all times and shall be replaced or repaired when necessary to provide adequate visibility.

1. Striping – Fire apparatus access roads shall be marked by painted lines of red traffic paint 6 inches in width to show the boundaries of the lane. The words “NO PARKING FIRE LANE” or “FIRE LANE NO PARKING” shall appear in 4 inch white letters at 25 foot intervals on the red border markings along both sides of the fire lanes. Where a curb is available, the striping shall be on the vertical face of the curb or on the horizontal road surface immediately adjacent to the curb.
2. Signs – Signs shall read “NO PARKING FIRE LANE” or “FIRE LANE NO PARKING” and shall be 12 inches wide and 18 inches high. Signs shall be painted on a white background with letters and borders in red, using not less than 2 inch lettering. Signs shall be permanently affixed to a stationary post and the bottom of the sign shall be 6 feet, 6 inches above finished grade. Signs shall be spaced not more than 50 feet apart along both sides of the fire lane. Signs may be installed on permanent buildings or walls or as approved by the fire code official.

**503.4 Obstruction of fire apparatus access roads.** Fire apparatus access roads shall not be obstructed in any manner, including the parking of vehicles. The minimum widths and clearances established in Section 503.2.1 and any area marked as a fire lane as described in Section 503.3 shall be maintained at all times. It is unlawful for any person to park, stop, or leave standing any non-emergency vehicle within any area specifically designated as a fire apparatus access road. The owner or person in control of the property upon which a fire apparatus access road exists shall cause any motor vehicle, other than an authorized emergency vehicle, that is parked in the fire lane to be removed in compliance with applicable laws. It is an affirmative defense to this section that written approval has been obtained from the fire department for closure of one-half the width of the fire apparatus access road while repairing the surface of the road.

**Exception:** An approved controlled access gate meeting all the requirements of all applicable city codes.

**503.5 Required gates or barricades.** The fire code official authorized to require the installation and maintenance of gates or other approved barricades across fire apparatus access roads, trails or other access ways, not including public streets, alleys or highways.

**503.5.1 Secured gates and barricades.** When required, gates and barricades shall be secured in an approved manner. Roads, trails and other access ways that have been closed and obstructed in the manner prescribed by Section 503.5 shall not be trespassed on or used unless authorized by the owner and the fire code official.

Exception: The restriction on use shall not apply to public officers acting within the scope of duty.

**503.6 Controlled access gates.** It is unlawful for any owner or other person in control of public or private property to have a controlled access gate located on or restricting access to his or her property unless the gate is in compliance with the following:

1. Gates consisting of a single wooden railing that pivots vertically to allow passage of vehicles shall be so constructed and maintained to break away on minor impact or on application of manual pressure at the end most remote from the pivot point. The wooden railings shall be of soft wood and mounted on the pivot point with a knife edge bracket or otherwise scored to create a weak point that will break away when pressure is applied. The opening motors shall be connected to an approved infrared receiver as described in Item 4 below.
2. Horizontal swinging gates shall open manually using an approved padlock. Each gate shall have a pin that has the capability of being secured with the approved padlock installed on the end of the operating arm closest to the gate. If no operating arms are installed, then a light duty metal chain and approved padlock shall be used to secure the gate. If provided, the opening motors of each gate shall be connected to an approved infrared receiver as described in #4 below.
3. Rolling or sliding type gates shall not be installed in residential communities. Rolling or sliding type gates shall have an approved locking box mounted on the gate. The box shall open from both sides of the gate. This box shall be painted red and the word "FIRE" shall be lettered on the exterior of the box. There shall be a T-type handle attached to a cable release inside the box. When pulled, the cable shall disengage all opening mechanisms allowing the gate to be opened manually. This box shall be secured with an approved padlock. The opening motors of each gate shall be connected to an approved infrared receiver as described in Item 4 below.

**Exception:** One- and two-family dwellings.

4. All motorized gates shall be equipped with an approved infrared detector system, as approved by the Irving Fire Dept:
  - a. An infrared detector shall be of a type that receives the infrared frequency utilized by the Irving Fire Department. There shall be two detectors, facing in opposite directions allowing gate control from opposite directions
  - b. The infrared detector shall be of a type designed to work in all weather conditions, and the installation shall protect the detector from physical damage.
  - c. The infrared detector shall be located so that it will receive a clear signal from the approved data-encoded emitter at a distance of 30 feet from the gate, or another approved distance if circumstances warrant a modification. The detector's position shall also be adjusted in an effort to avoid any unwanted opening of the gate potentially caused by other emergency vehicle traffic.
  - d. The signal from the infrared detector to the operating motor of the gate shall override or bypass the opening system or any other system that needs to be overridden or bypassed in order to open the gate.
4. When activated by the infrared detector, the gate shall operate at a minimum speed of one foot per second and remain open for 10 minutes before closing.
5. No property shall receive a new Certificate of Occupancy unless it meets all the requirements of this section.
6. Existing gate operating systems not in compliance with the approved infrared system shall be updated to the current requirements at the time of application for a new Certificate of Occupancy or no later than November 1, 2021, whichever occurs first.

**503.6.1. Installation of controlled access gates.** Prior to the installation of a controlled access gate, the owner or person in control of the property on which a controlled access gate will be located shall submit plans for the proposed gate to the Irving Fire Department and all other applicable City Departments for review, and obtain a controlled access gate permit from the City of Irving Inspections Department. The plans shall include a site plan of the entire property, a description of the gate, and a description of the proposed operating system. When the plans have been approved by the Fire Department and other City departments, a permit will be issued if

the application and corresponding forms are complete and the applicable permit fee is paid. The gate shall not be placed into operation until it has been tested and approved by the fire department and inspections department for the City of Irving.

**APPENDIX D FIRE APPARATUS ACCESS ROADS**

The provisions contained in this appendix are not mandatory unless specifically referenced in the adopting ordinance.

**SECTION D101 GENERAL**

**D101.1 Scope.** Fire apparatus access roads shall be in accordance with this appendix and all other applicable requirements of the International Fire Code.

**SECTION D102 REQUIRED ACCESS**

**D102.1 Access and loading.** Facilities, buildings or portions of buildings hereafter constructed shall be accessible to fire department apparatus by way of an approved fire apparatus access road with asphalt, concrete or other approved driving surface capable of supporting the imposed load of fire apparatus weighing at least 75,000 pounds.

**SECTION D103 MINIMUM SPECIFICATIONS**

**D103.1 Access road width with a hydrant.** Where a fire hydrant is located on a fire apparatus access road, the minimum road width shall be 26 feet (7925 mm). See Figure D103.1.

**D103.2 Grade.** Fire apparatus access roads shall not exceed 6 percent in grade.

Exception: Grades steeper than 6 percent as approved by the fire chief.

**D103.3 Turning radius.** The minimum turning radii shall be as follows:

For 90 degree or less turns:

1. 24 foot fire lane – minimum internal radius is 30 feet.
2. 30 foot fire lane – minimum internal radius is 20 feet.

For turns greater than 90 degrees, AASHTO Geometric Design Standards shall be utilized.

Widths shall be increased when, in the opinion of the chief, they are not adequate to provide fire apparatus access.

**D103.4 Dead ends.** Dead-end fire apparatus access roads in excess of 150 feet (45 720 mm) shall be provided with width and turnaround provisions in accordance with Table D103.4.

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

<b>LENGTH (feet)</b>	<b>WIDTH (feet)</b>	<b>TURNAROUNDS REQUIRED</b>
0-150	24	None required
150-500	24	120-foot Hammerhead, 60-foot “Y” or 96-foot-diameter cul-de-sac in accordance with Figure D103.1
501-750	28	120foot Hammerhead, 60-foot “Y” or 96-foot-diameter cul-de-sac in accordance with Figure D103.1
Over 750		Special approval required

**D103.5 Fire apparatus access road gates.** Gates securing the fire apparatus access roads shall comply with all of the following criteria:

1. Where a single gate is provided, the gate width shall be not less than 24 feet. Where a fire apparatus road consists of a divided roadway, the gate width shall be not less than 12 feet.
2. Gates shall be of the swinging or sliding type.
3. Construction of gates shall be of materials that allow manual operation by one person.
4. Gate components shall be maintained in an operative condition at all times and replaced or repaired when defective.
5. Electric gates shall be equipped with a means of opening the gate by fire department personnel for emergency access. Emergency opening devices shall be approved by the fire code official.
6. Methods of locking shall be submitted for approval by the fire code official.
7. Electric gate openers, where provided, shall be listed in accordance with UL 325.
8. Gates intended for automatic operation shall be designed, constructed and installed to comply with the requirements of ASTM F 2200.

**D103.6 Signs.** Where required by the *fire code official*, fire apparatus access roads shall be marked with permanent NO PARKING—FIRE LANE signs complying with Figure D103.6. Signs shall have a minimum dimension of 12 inches (305 mm) wide by 18 inches (457 mm) high and have red letters on a white reflective background. Signs shall be posted on one or both sides of the fire apparatus road as required by Section D103.6.1 or D103.6.2.

**D103.6.1 Roads 20 to 26 feet in width.** Fire apparatus access roads 20 to 26 feet wide (6096 to 7925 mm) shall be posted on both sides as a fire lane.

**D103.6.2 Roads more than 26 feet in width.** Fire apparatus access roads more than 26 feet wide (7925 mm) to 32 feet wide (9754 mm) shall be posted on one side of the road as a fire lane.

## **SECTION D104 COMMERCIAL AND INDUSTRIAL DEVELOPMENTS**

**D104.1 Buildings exceeding three stories/30 feet in height.** Buildings or facilities exceeding 30 feet or three stories in height shall have at least three means of fire apparatus access for each structure.

**D104.2 Buildings exceeding 62,000 square feet in area.** Buildings or facilities having a gross building area of more than 62,000 square feet shall be provided with two separate and approved fire apparatus access roads.

**Exception:** Projects having a gross building area of up to 124,000 square feet having a single approved fire apparatus access road when all buildings are equipped throughout with approved automatic sprinkler systems.

**D104.3 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.

## **SECTION D105 AERIAL FIRE APPARATUS ACCESS ROADS**

**D105.1 Where required.** Buildings or portions of buildings or facilities exceeding 30 feet in height above the lowest level of fire department vehicle access shall be provided with approved fire apparatus access roads capable of accommodating fire department aerial apparatus. Overhead utility and power lines shall not be located within the aerial fire apparatus access roadway.

**D105.2 Width.** Fire apparatus access roads shall have a minimum unobstructed width of 26 feet in the immediate vicinity of any building or portion of building more than 30 feet in height.

**D105.3 Proximity to building.** At least one of the required access routes meeting this condition shall be located within a minimum of 15 feet and a maximum of 30 feet from the building, and shall be positioned parallel to one entire side of the building.

## **SECTION D106 MULTIPLE-FAMILY RESIDENTIAL DEVELOPMENTS**

**D106.1 Projects having more than 100 dwelling units.** Multiple-family residential projects having more than 100 dwelling units shall be equipped throughout with two separate and approved fire apparatus access roads.

**Exception:** Projects having up to 200 dwelling units may have a single approved fire apparatus access road when all buildings, including nonresidential occupancies, are equipped throughout with approved automatic sprinkler systems installed in accordance with Section 903.3.1.1 or 903.3.1.2 of the *International Fire Code* as adopted by the City of Irving.

**D106.2 Projects having more than 200 dwelling units.** Multiple-family residential projects having more than 200 dwelling units shall be provided with two separate and approved fire apparatus access roads regardless of whether they are equipped with an approved automatic sprinkler system.

## **SECTION D107 ONE- OR TWO-FAMILY RESIDENTIAL DEVELOPMENTS**

**D107.1 One- or two-family dwelling 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.

### **Exceptions:**

1. Where there are no more than 60 dwelling units on a single public or private fire apparatus access road and all dwelling units are equipped throughout with an approved automatic sprinkler system in accordance with Section 903.3.1.1, or 903.3.1.3 of the *International Fire Code* as adopted by the City of Irving, access from two 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 code official.