




# City of Phoenix

FIRE DEPARTMENT  
FIRE PREVENTION DIVISION

## Explanatory Policy – Fire Apparatus Access Roads

<b>SUBJECT:</b> Fire Apparatus Access Roads – Permanent and During Construction	<b>EFFECTIVE DATE:</b> July 19, 2019
<b>REFERENCES:</b> The Phoenix Fire Code (2018 Edition) Section 503 & 3310	<b>REVIEW DATE:</b> July 2024
<b>APPROVED:</b>  John Mertens, Fire Marshal	

### Scope:

#### Fire Apparatus Access Roads

Fire apparatus access roads including alternative surface access roads shall be provided and maintained with an all-weather driving capabilities surface in accordance with Sections 503.2 – 503.2.10.

**503.2.1 Dimensions.** Fire apparatus access roads shall have an unobstructed width of not less than 20 feet (6096 mm), exclusive of shoulders, except for approved security gates in accordance with Section 503.6, and an unobstructed vertical clearance of not less than 13 feet 6 inches (4115 mm) 14 feet (4267 mm).

**503.2.1.1 Vehicle passing points.** When fire department access roads exceed 300 feet (91 440 mm) in length, vehicle passing points shall be installed at intervals not to exceed 300 feet (91 440 mm). Vehicle passing points shall be a minimum of 30 feet (9144 mm) in width exclusive of shoulders and 50 feet (15 240 mm) in length.

**Exception:** When code compliant fire lanes are continuous through a property leading to an approved exit point, no passing points are required.

**503.2.1.2 Loading areas and passenger drop-off areas.** On private property, where fire apparatus access roads are utilized for loading or unloading or are utilized for passenger drop off or pickup, an additional 8 feet (2438 mm) of width shall be added to the fire apparatus access road. This width is in addition to the minimum 20-foot (6096 mm) access road width exclusive of shoulders. Fire apparatus access roads established and approved per Phoenix Fire Department or Planning and Development Department site plan prior to June 20, 2007 are not required to be widened if maintained and marked in accordance with this chapter.



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**503.2.2 Authority.** The fire code official shall have the authority to require or permit modifications to the required access widths where they are inadequate for fire or rescue operations or where necessary to meet the public safety objectives of the jurisdiction.

**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 in accordance with Maricopa Association of Governments standards.

**503.2.3.1 Stabilized edge.** A stabilized edge meeting Maricopa Association of Governments standards or equivalent is required on fire apparatus access roads.

**503.2.3.2 Live loads.** Fire apparatus access roads shall be designed and maintained to support the imposed loads of fire apparatus and shall be designed and maintained to support the imposed live load of 70,000 pounds (31 752 kg) with a maximum axle load of 28,000 pounds (12 701 kg).

**503.2.3.3 Alternative surface.** Fire apparatus access roads not conforming to a Maricopa Association of Governments standard shall be in accordance with this section, Maricopa Association of Governments standards.

**503.2.4 Turning radius.** The required turning radius of a fire apparatus access road shall be determined by the fire code official have a minimum 45-foot (13 716 mm) centerline radius [35-foot (10 668 mm) inside radius, 55-foot (16 764 mm) outside radius] on curves.

**503.2.5 Dead ends.** Dead-end fire apparatus access roads in 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 or an elevated surface is part of a fire apparatus access road, the bridge shall be constructed and maintained in accordance with AASHTO HB-17. 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 to bridges where required by the fire code official. Where elevated surfaces designed for emergency vehicle use are adjacent to surfaces that are not designed for such use, approved barriers, approved signs or both shall be installed and maintained where 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 shall not exceed 15 percent (15 feet in 100 feet) (4572 mm in 30 480 mm). Cross-slope of an access road shall not exceed a depth of 6 inches (152 mm).

**503.2.7.1 Drainage.** Water drainage shall be directed away from or piped under the fire apparatus access roads. Ponding of water on an access road shall not exceed a depth of 6 inches (152 mm).

**503.2.8 Angles of approach and departure.** The angles of approach and departure for fire apparatus access roads shall be within the limits established by the fire code official based on the fire department's apparatus.



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**503.2.9 Curbs.** A rolled curb meeting Maricopa Association of Governments standards or equivalent shall be installed at the entrances to fire apparatus access roads.

**503.2.10 Maintenance.** Fire apparatus access roads shall be maintained as approved, by the owner at all times.

### **Alternative Surface Fire Apparatus Access Roads -503.2.3.3**

**Alternative surface.** Alternative surface fire lanes shall meet the requirements of fire apparatus access roads as previously described.

**Compaction.** Minimum 95 percent compaction of 6-inches of sub-grade soil is required.

**Marking.** Alternative surface fire apparatus access roads shall be identified by curbs along the entire length of the alternative surface fire apparatus access road. Red reflectors shall be installed to define the width of alternative surface fire apparatus access roads. The reflectors shall be imbedded into bordering curbing at intervals not exceeding 25 feet (4572 mm).

**Engineering report.** An engineer registered by the State of Arizona shall prepare and seal a soil compaction report, ensuring the road will support the imposed live load, drainage, stabilization and curbing. The report shall be submitted for review by the fire code official.

**Special inspections.** An Arizona-registered professional engineer shall conduct a special inspection prior to final approvals being issued for the alternative surface fire apparatus access road. The report shall be submitted for review by the fire code official.

**Special inspection documentation.** The special inspection documentation shall include, but not be limited to, the following:

1. Subgrade soil compaction report.
2. Base material quality, thickness and compaction.
3. Concrete depth and compressive strength, when applicable.
4. An evaluation of the installation in accordance with design drawings and manufacturer specifications.
5. Crown and drainage requirements.
6. Stabilization.

### **Fire Lane Signs for Fire Apparatus Access Roads**

**503.3 Marking.** Where required by the fire code official, approved signs or other approved notices or markings that include the words NO PARKING—FIRE LANE shall be provided for fire apparatus access



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roads and alternative surface fire lanes to identify such roads or prohibit the obstruction thereof. Fire lane signage shall be maintained in a clean and legible condition at all times and be replaced or repaired when necessary to provide adequate visibility.

Fire apparatus access roads shall be identified by fire lane signs as follows:

1. Signs shall be attached to an approved stationary pole set in concrete a minimum of depth of 18 inches (457 mm).
2. The bottom of each sign shall be 7 feet (2137 mm) above grade.
3. The signs shall face oncoming traffic.
4. The signs shall be set back from the curb line or sidewalk a minimum of 12 inches (305 mm) to maximum of 18 inches (457 mm).
5. Signs shall be plainly visible at all times. Vegetation or other obstructions shall be located such that a minimum 3-foot (914 mm) clearance is maintained along the line of sight.
6. Spacing of signs and marking of curbs shall be as follows:
  - a. A sign shall be installed a maximum of 15 feet (4572 mm) from the beginning and end of the fire lane.
  - b. When spacing between signs does not exceed 75 feet (22 860 mm), the curb on the sign side of the fire lane shall be painted red.
  - c. When spacing between signs does not exceed 100 feet (30 480 mm), curb on the sign side of the fire lane shall be painted red and stenciled "FIRE LANE --NO PARKING" midway between signs.

**Stenciling.** The fire department is authorized to require stenciling or other permanent markings to improve the identification of fire apparatus access roads. When required, the stenciling shall state "FIRE LANE – NO PARKING." Lettering shall be white on a red painted curb and shall be a minimum of 3 inches (76 mm) high with ½ inch (13 mm) brush stroke.

**Marking not required.** A fire apparatus access road that is greater than 36 ft in width shall not be required to have signs and red painted curbs on either side of the fire apparatus access road.

**Signs required on both sides of a road.** When a fire apparatus access road is less than 28 feet (8534 mm) in width fire lane signs and red painted curbs are required on both sides of the access road.

**Signage.** Required fire department signage shall be either .80" 3M aluminum or Arizona Department of Transportation (ADOT) approved aluminum composite material or equivalent. See Appendix D.

**Fire apparatus access road signs.** Fire apparatus access roads less than 36 feet (10972 mm) wide shall be identified by fire lane signs (see Appendix D) and red curbs on both sides of the road as follows:



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1. Signs shall be attached to an approved stationary pole set in concrete a minimum of depth of 18 inches (457 mm).
2. The bottom of each sign shall be 7 feet (2137 mm) above grade.
3. The signs shall face oncoming traffic.
4. The signs shall be set back from the curb line or sidewalk a minimum of 12 inches (305 mm) to maximum of 18 inches (457 mm).
5. Signs shall be plainly visible at all times. Vegetation or other obstructions shall be located such that a minimum 3-foot (914 mm) clearance is maintained along the line of sight.
6. Spacing of signs and marking of curbs shall be as follows:
  - a. A sign shall be installed a maximum of 15 feet (4572 mm) from the beginning and end of the fire lane.
  - b. When spacing between signs does not exceed 75 feet (22 860 mm), the curb on the sign side of the fire lane shall be painted red.
  - c. When spacing between signs does not exceed 100 feet (30 480 mm), curb on the sign side of the fire lane shall be painted red and stenciled "FIRE LANE --NO PARKING" midway between signs.

### Exceptions:

1. A fire apparatus access road that is greater than 36 feet (10 975mm) in width require no signs or red painted curbs.
2. Fire apparatus access roads serving only Group R-3 occupancies are required to have signs and red painted curbs installed on both sides of the road when 20 feet (6096 mm) or less in width.

**503.3.3 Stenciling.** The fire code official is authorized to require stenciling or other permanent markings to improve the identification of fire apparatus access roads. When required, the stenciling shall state "FIRE LANE – NO PARKING." Lettering shall be white on a red painted curb and shall be a minimum of 3 inches (76 mm) high with ½ inch (13 mm) brush stroke.

**Exception:** A fire apparatus access road that is greater than 36 ft in width shall not be required to have signs and red painted curbs on either side of the fire apparatus access road

**Maintenance.** The owner shall maintain the fire apparatus access road signage as approved by the fire code official.

### Fire Apparatus Access Roads During Construction - 3310

**Required access.** Fire apparatus access is required within 100 feet (30 480 mm) of temporary or permanent fire department connections, see Section 3310.

**3310.3** Fire apparatus access is required within 150 feet (45 720mm) of all points on the exterior of the building.



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Fire apparatus access roads shall be provided prior to introducing combustible materials on the construction site. Fire apparatus access roads on construction sites shall not be obstructed. Fire apparatus access roads during construction shall meet the requirements of fire apparatus access roads as previously described.

**Exception** - Stabilized edges, except where required by the fire code official.

The live loads, surface and curbs on construction sites may be as follows:

**Surface.** At a minimum, the unpaved surface of fire apparatus access roads shall be as follows:

1. Minimum 6 inches (152 mm) of native soil compacted to 95 percent of standard proctor density (ASTM D 698), and
2. Minimum 4 inches (102 mm) of aggregate base compacted to 100 percent of standard proctor density (ASTM D 698).

**Curbs.** Curbs are not required for fire apparatus access roads for sites under construction.

**Engineering Report.** An engineer registered by the State of Arizona shall prepare and seal the soil compaction report ensuring the road will support the imposed live load, drainage, stabilization and curbing. The report shall be available for review by the fire code official.

**Maintenance of fire apparatus access roads during construction.** The owner shall maintain the fire apparatus access roads as approved by the fire code official.

### **Obstructions to Fire Apparatus Access Roads – 503.4**

**Fences.** When fences are installed where the distances from an approved fire department access road to exceed the maximum distance allowed in Section 503, a pedestrian gate shall be provided in the fence to maintain the required fire department access. The gate shall be a minimum 4 feet (1219 mm) in width and be equipped with a key box in accordance with Section 506.

**Other obstructions to access.** When other obstructions are installed that cause the distances from an approved fire department access road to exceed the maximum distance allowed in Section 503, the *fire code official* is authorized to require additional fire protection as specified in Section 901.4.3.