



# Town of Cave Creek

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*\*Taken from the standards set forth in the Town of Cave Creek Technical Design Guidelines for transportation.*

## **PRIVATE DRIVES AND ACCESS REQUIREMENTS FOR EMERGENCY VEHICLES** (Reference International Fire Code Section 503)

Change in the areas where construction is taking place throughout Cave Creek has brought about new challenges for emergency response. The fire department access and the ability to stage an emergency vehicle once they have reached a property to perform firefighting or an emergency medical task can be greatly compromised by the topography. The following criteria are the result of consultation with local fire departments and nationally accepted practices. The findings have prompted these design requirements for private and shared private drives leading to one or more single-family dwellings. This information is not designed to be all encompassing of every situation. If you have any questions for your special needs, please contact the Town of Cave Creek Fire Code Official.

### **Definitions:**

**All Weather Surface (AW)** is a road surface made up of materials compressed to 90% and capable of supporting vehicles in excess of 50,000 pound G.V.S. under any weather condition. (i.e. decomposed granite). Also see **Hard Surface**.

**Common Private Driveway** is a private driveway that serves more than one single-family residence.

**Drive Length** is measured from the entrance of the drive to the structure.

**Drive Width** is measured from the edges of the designated improved drivable surface. 2-12-2 and 2-16-2, is a 2 feet clear AW surface on both sides of the 12 or 16 foot hard surface drive.

**Grade** is the degree of inclination of a slope, road, or other surface. (See **Slope**).

**Hard Surface** is a drive surface of concrete, asphalt, or pavers designed to support vehicles in excess of 50,000 pounds under any weather condition.

**Hose Lay** is the extension of a hand held fire hose as it is extended around the perimeter of the structure. If the hose lay is more than 200 feet from the road to all portions of the exterior, an **Operational Platform** is required.

**Sprinkler-13D** is a NFPA 13D residential fire sprinkler system.

**Operational Platform** is an area located on site where the emergency vehicle is staged while performing emergency medical or firefighting task. The platform shall be 20 feet by 30 feet with a maximum cross grade of 5 percent. Operational platforms are required when drive or adjacent street grade is greater than 12% slope or the hose lay from the truck staging area to all portion on the exterior of the structure are greater than 200 feet.

**Slope** is the ground, road or other surface that forms a natural or artificial incline. The percentage of slope is determined by dividing the rise by the horizontal run. [% Slope = (Rise/Run) x 100].

**Turn-a-round** is required for emergency vehicles when the structure is more than 150 feet from the road. This can be accomplished with a circle drive with an outside radius of 40' 6", T-Type hammerhead 16' x 76', or variation there of. See Attached.

**Turn-out** is required on all extended driveways 300 feet or greater in length to a single residence. This turnout shall widen the drive to 20 feet minimum width over a minimum length of 45 feet.

**ACCESS GRADES FROM 0 TO 12% FOR ONE SINGLE FAMILY RESIDENCES**

<u>Drive Length</u>	<u>Drive Width</u>	<u>Drive Surface</u>	<u>Turn-a-round Required</u>	<u>Hose Lay</u>	<u>Sprinkler -13D</u>
Less than 200 feet	12	AW	No	Less than 200 feet	Yes
More than 200 feet	2-12-2	AW	Yes	More than 200 feet	Yes

**ACCESS GRADES FROM 12.1 % TO 15% FOR ONE SINGLE FAMILY RESIDENCES**

<u>Drive Length</u>	<u>Drive Width</u>	<u>Drive Surface</u>	<u>Turn-a-round Required</u>	<u>Hose Lay</u>	<u>Sprinkler -13D</u>
Less than 200 feet	12	HARD	No	Less than 200 feet	Yes
More than 200 feet	2-12-2	HARD	Yes	More than 200 feet	Yes

**ACCESS GRADES FOR MORE THAN 15.1% FOR ONE SINGLE FAMILY RESIDENCES**

<u>Drive Length</u>	<u>Drive Width</u>	<u>Drive Surface</u>	<u>Turn-a-round Required</u>	<u>Hose Lay</u>	<u>Sprinkler -13D</u>
Less than 200 feet	12	HARD	No	Less than 200 feet	Yes
More than 200 feet	2-12-2	HARD	Yes	More than 200 feet	Yes

**ACCESS GRADES 0 TO 12% FOR TWO TO FOUR SINGLE FAMILY RESIDENCES**

<u>Drive Length</u>	<u>Drive Width</u>	<u>Drive Surface</u>	<u>Turn-a-round Required</u>	<u>Hose Lay</u>	<u>Sprinkler -13D</u>
Less than 200 feet	12	HARD	No	Less than 200 feet	Yes
More than 200 feet	2-16-2	HARD	Yes	More than 200 feet	Yes

ACCESS GRADES FROM **12.1 % TO 15%** FOR **TWO TO FOUR** SINGLE FAMILY RESIDENCES

<u>Drive Length</u>	<u>Drive Width</u>	<u>Drive Surface</u>	<u>Turn-a-round Required</u>	<u>Hose Lay</u>	<u>Sprinkler -13D</u>
Less than 200 feet	2-16-2	HARD	No	Less than 200 feet	Yes
More than 200 feet	2-16-2	HARD	Yes	More than 200 feet	Yes

ACCESS GRADES FROM MORE THAN **15.1%** FOR **TWO TO FOUR** SINGLE FAMILY RESIDENCES

<u>Drive Length</u>	<u>Drive Width</u>	<u>Drive Surface</u>	<u>Turn-a-round Required</u>	<u>Hose Lay</u>	<u>Sprinkler -13D</u>
Less than 200 feet	2-16-2	HARD	No	Less than 200 feet	Yes
More than 200 feet	2-16-2	HARD	Yes	More than 200 feet	Yes

ACCESS GRADES **0 TO 12%** FOR **FIVE OR MORE** SINGLE FAMILY RESIDENCES

<u>Drive Length</u>	<u>Drive Width</u>	<u>Drive Surface</u>	<u>Turn-a-round Required</u>	<u>Hose Lay</u>	<u>Sprinkler -13D</u>
Less than 200 feet	2-16-2	HARD	No	Less than 200 feet	Yes
More than 200 feet	2-16-2	HARD	Yes	More than 200 feet	Yes

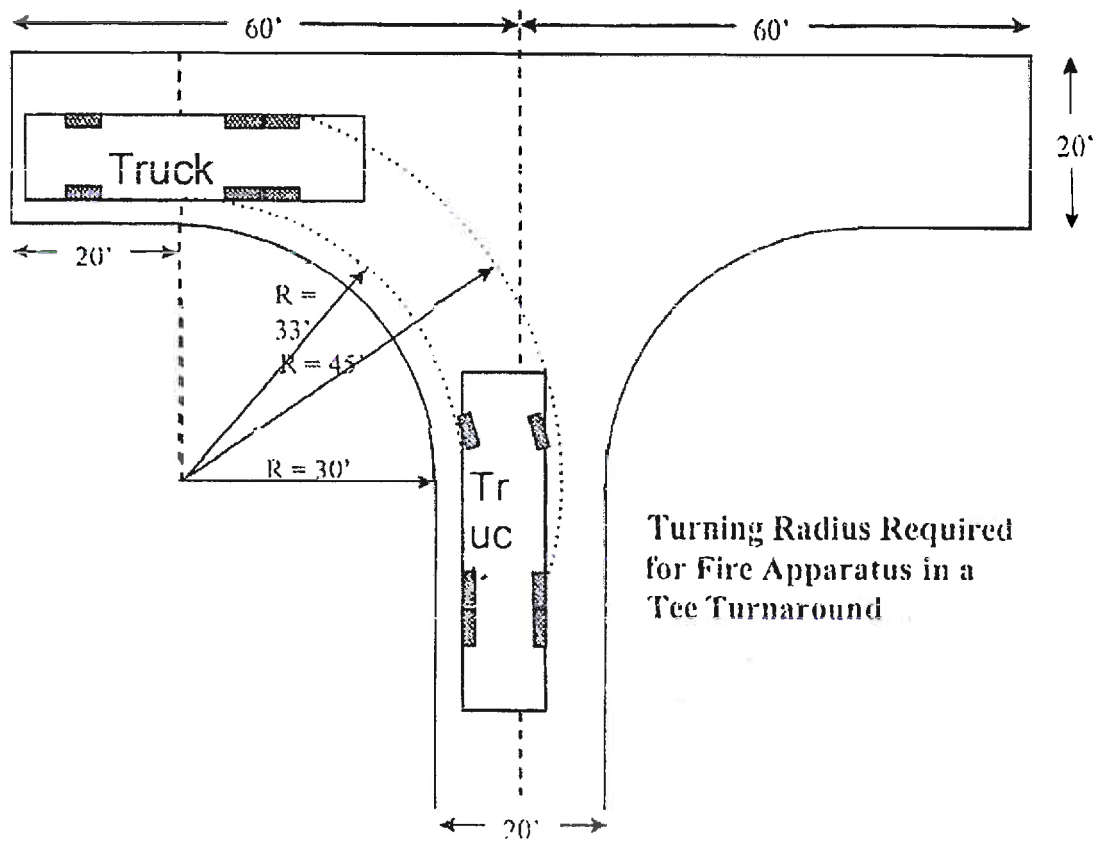
ACCESS GRADES FROM **12.1 % TO 15%** FOR **FIVE OR MORE** SINGLE FAMILY RESIDENCES

<u>Drive Length</u>	<u>Drive Width</u>	<u>Drive Surface</u>	<u>Turn-a-round Required</u>	<u>Hose Lay</u>	<u>Sprinkler -13D</u>
Less than 200 feet	2-16-2	HARD	No	Less than 200 feet	Yes
More than 200 feet	2-16-2	HARD	Yes	More than 200 feet	Yes

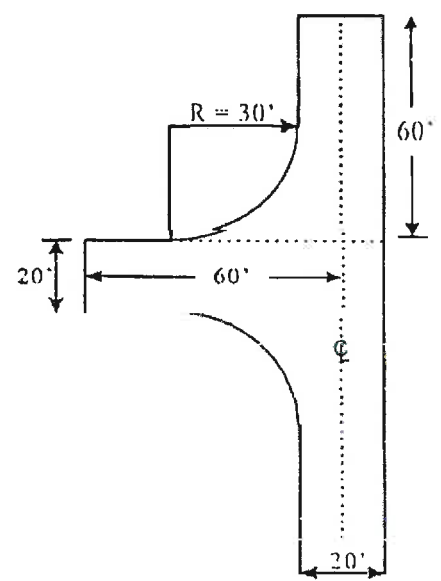
ACCESS GRADES FROM MORE THAN **15.1%** FOR **FIVE OR MORE** SINGLE FAMILY RESIDENCES

<u>Drive Length</u>	<u>Drive Width</u>	<u>Drive Surface</u>	<u>Turn-a-round Required</u>	<u>Hose Lay</u>	<u>Sprinkler -13D</u>
Less than 200 feet	20	HARD	No	Less than 200 feet	Yes
More than 200 feet	20	HARD	Yes	More than 200 feet	Yes

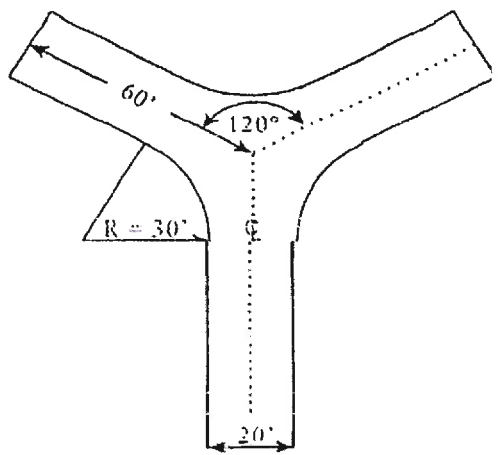
**\*\* Operational platforms are required regardless of access grade when the hose lay is in excess of 200 feet. See definitions above for additional requirements.**



The 20 ft access width is a minimum for use only with an *exclusive* fire department emergency access way. For roadways or public streets, these access widths must be increased. The end length of 60 ft may remain the same, however. Variations of this hammerhead are shown

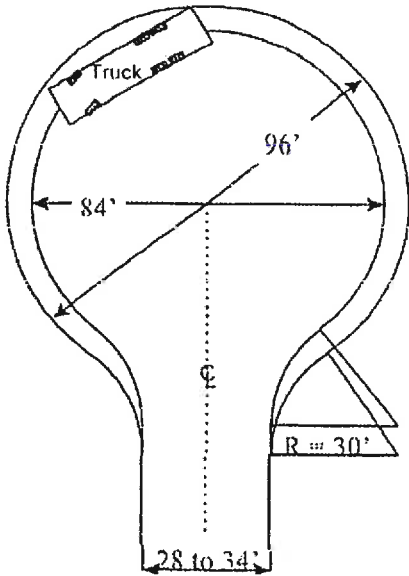


These are approved alternatives to and variations from a standard Hammerhead Tee. Any angle from 90° to 180° is acceptable provided the specified lengths and radii are maintained.



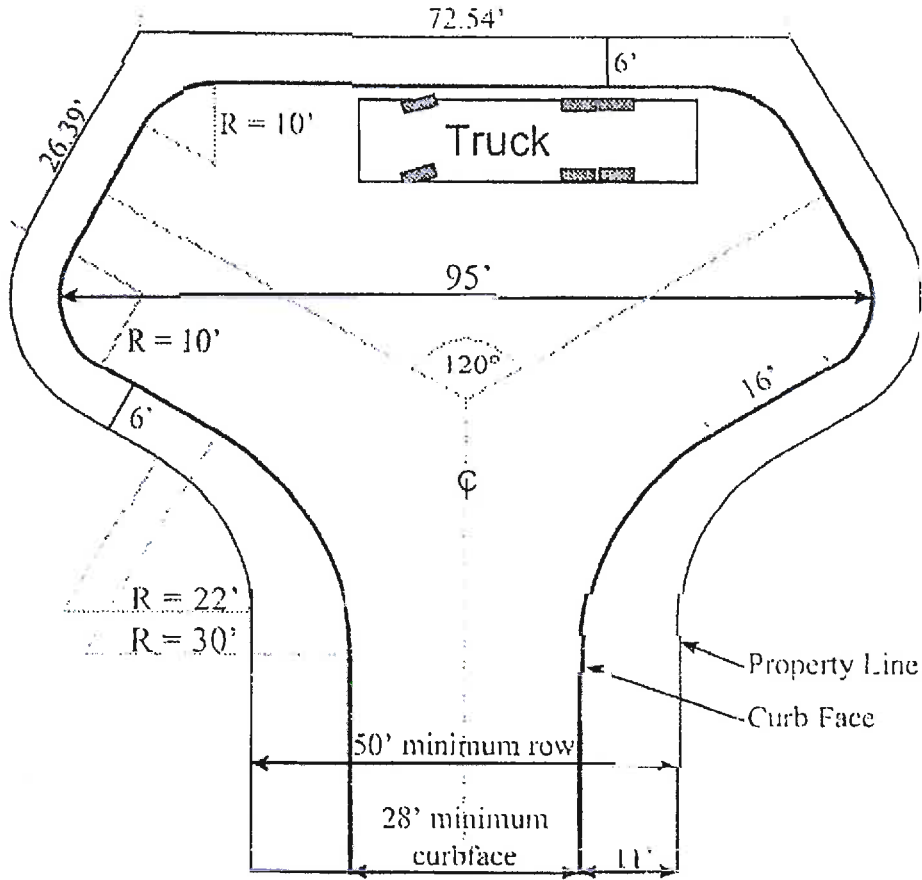
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## City Access Roadway Approved Cul-de-Sacs



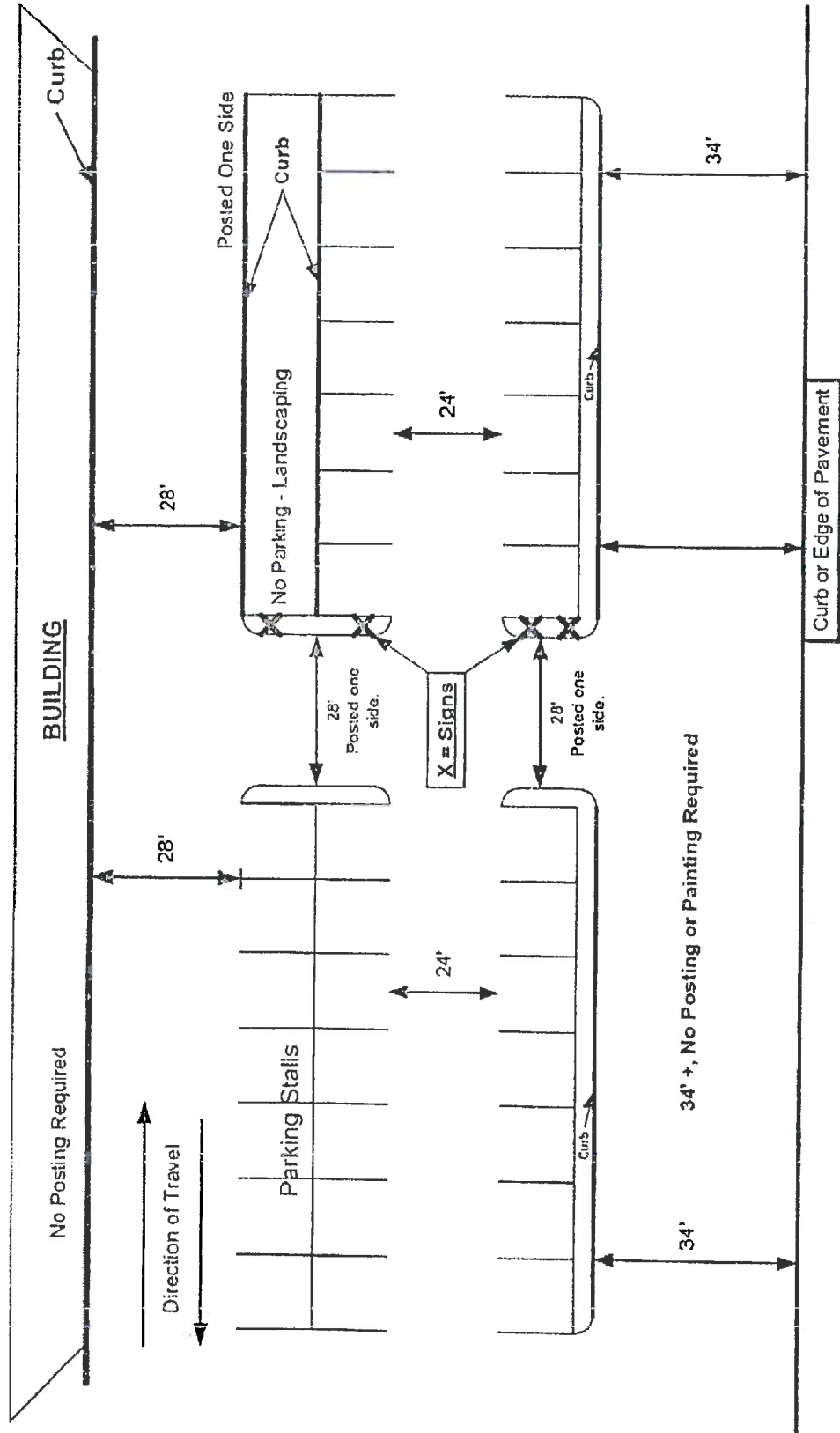
For cul-de-sacs under 500 ft in length as measured from the beginning curb of the dead end roadway to the center of the cul-de-sac, an 84 ft diameter bulb may be used. For any dead-end exceeding 500 ft, a 96 ft diameter bulb shall be used.

As an alternative to this requirement, the cul-de-sac below may be used regardless of the dead-end length from the curb. *Please note the change in scale.*



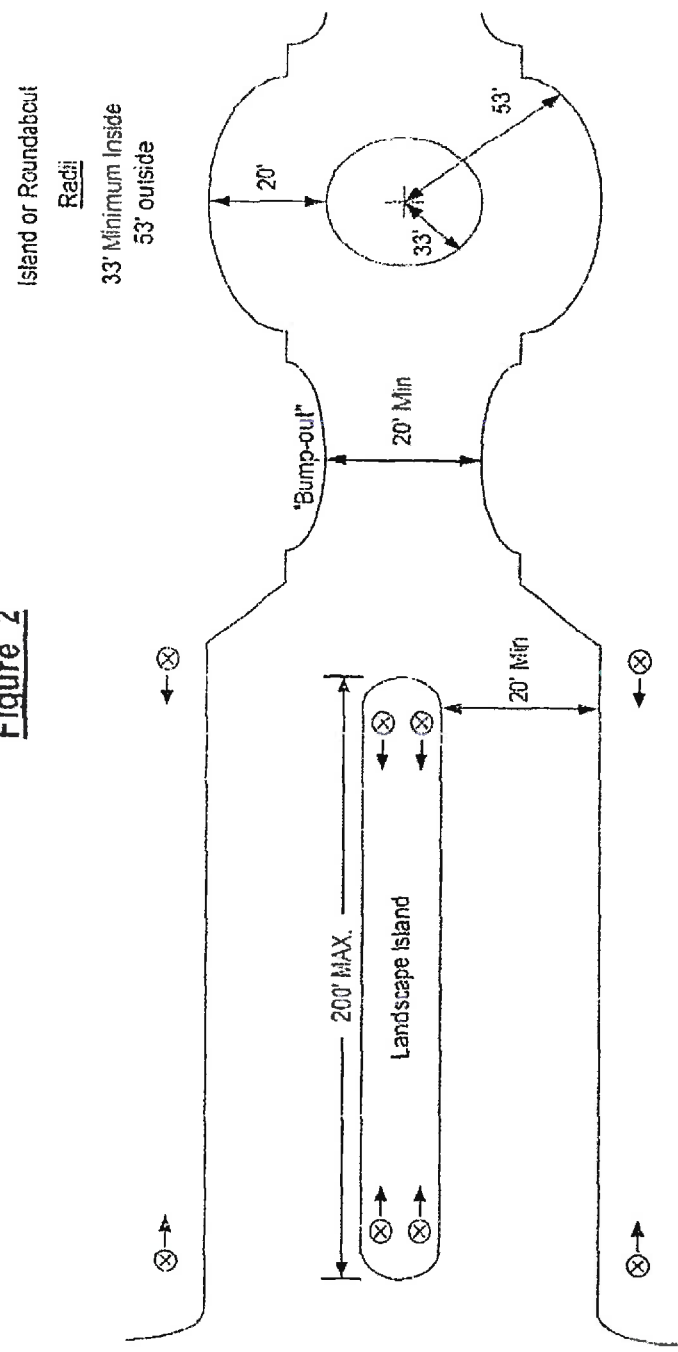
# Typical Fire Access

Figure 1



# Traffic Calming Devices Exaggerated

Figure 2



Speed Bumps are Discouraged

Fire Lane Signs (Directions)