

FIRE DEPARTMENT ACCESS

Based on the 2012 edition of the International Fire Code

The Fire Department is required to respond to a multitude of emergencies in various types of buildings and occupancies. These include single-family dwellings, apartment buildings, shopping malls, business complexes, industrial complexes, hospitals, and nursing homes. To provide effective fire fighting operations, we must be able to reach all structures by way of approved access roadways, streets, or driveways.



Residential Cul-De-Sac



Residential Looped Lane

To assist developers and designers in meeting our requirements, we have defined some terms and listed minimum design standards considered necessary for effective fire fighting operations.

❑ **Fire Department Access**

An approved route that is always available for use by fire trucks and is designed to meet fire equipment load requirements. Except for *Loop Lanes*, *Shared Driveways*, and *Private Driveways*, all access routes must be at least 20 feet wide. **When a dead-end access route exceeds 150 feet in length, an approved turn around area must be provided.**

❑ **Public Street Access**

A *Fire Department Access* route on a public right of way. Public street access routes must comply with the City or County road design standards and also must comply with the International Fire Code.

❑ **Private Street Access**

A *Fire Department Access* route on private land. Private street access routes must comply with the International Fire Code.

❑ **Grades**

Street grades shall comply with City or County design standards for both *Public* and *Private Street Access* routes. Maximum grade shall not exceed 8% (12% allowed in hilly terrain).

❑ **Grades on Turn Around Areas**

Maximum grades on turn around areas shall not exceed 4%.

□ **Height**

All Fire Department access routes shall have at least 13 feet, 6 inches of vertical clearance for the entire required width.

□ **Looped Lane**

A *Fire Department Access* route in a public right of way, consisting of a looped road that must be at least 16 feet wide. Looped lanes may be approved for residential subdivisions and must be designed to approved standards (see design pages).

□ **Private Driveway**

A private driveway designed for the use of occupants of no more than two single-family dwelling units, or one two-family dwelling unit. If the dwelling units are located more than 100 feet from an approved *Fire Department Access* route, the private driveway must meet our minimum design standards: At least 12 feet wide; grades not to exceed 12%; adequate turn arounds provided if over 150 feet long; width to be increased if sharp curves are included; constructed with an all-weather surface and able to support the weight of a fire truck.

□ **Shared Driveway**

A *Fire Department Access* route on private property, serving three or more single-family units. A shared driveway must be at least 16 feet wide and be designed to approved standards (see design pages).

□ **Residential Cul-De-Sac, Commercial/Industrial Cul-De-Sac**

An approved turnaround area for public right of ways or private property, designed to Fire Department standards (see design pages).

□ **Tee Turnaround, Alternative Turnarounds**

An approved turnaround area for private property designed to Fire Department standards (see design pages).



ACCESS GUIDELINES

The following guidelines represent this department’s efforts to maintain consistency concerning Fire Department emergency access. It is our responsibility to ensure adequate access for Fire Department emergency responders. We therefore reserve the right to require modifications to established requirements if, in our opinion, the access cannot be provided or may be compromised.

Type of Surface

All access roadways shall be finished by application of an all-weather driving surface of hot-mix asphaltic concrete, or concrete pavement over a flexible base capable of supporting a design wheel load of 18,000 pounds (GVW 80,000 pounds minimum; H-20 loading).

The roadway design must be prepared and certified by an engineer registered by the State of Colorado. Any required Fire Department access within 100 feet of any building must meet the same wheel-loading criteria.

All required access roadways must be properly maintained and kept clear for emergency use at all times.

Any alternatives to these specifications must be reviewed and approved by the Grand Junction Fire Department prior to construction.

Two Points of Access

Providing two points of fire apparatus access has the following benefits:

- ❑ If one access route is blocked, emergency responders have a second route to the property.
- ❑ If an emergency requires evacuation of an area, the public will have an alternative exit route should one route be blocked by the emergency incident.

When two points of access are required, they shall be placed a distance apart equal to no less than one half of the length of the maximum overall diagonal dimension of the property or area to be served, and be measured in a straight line between accesses. **The Grand Junction Fire Department does not allow the second access point to be limited for use by emergency responders only. The second access must always be available for public use in case the other access is blocked.**

Commercial and Industrial Developments:

- ❑ Buildings or facilities exceeding 30 feet or 3 stories in height shall have at least 2 means of fire apparatus access.
- ❑ Buildings or facilities having a gross building area of more than 62,000 square feet shall have at least 2 means of fire apparatus access. If the buildings or facilities are provided with an approved automatic fire sprinkler system, the gross building area can be increased to 124,000 square feet with one access road.

Multi-family Residential Developments:

- ❑ Multi-family residential projects having more than 100 dwelling units shall be provided with at least 2 means of fire apparatus access.
- ❑ Multi-family residential projects of up to 200 dwelling units, which are provided with an approved fire sprinkler system, may have one means of fire apparatus access.

One or Two Family Residential Developments:

- ❑ Developments where the number of dwelling units exceeds 30, shall be provided with separate and approved fire apparatus access roads.
- ❑ Developments where the number of dwelling units is 60 or less may be served by a single fire apparatus access road, provided all dwelling units are provided with approved residential fire sprinkler systems.

Aerial Apparatus Roadway Width

- ❑ Fire apparatus access roadways 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. 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.

Maintenance of Access Roads

Maintenance of the required access shall be considered during the planning stages and prior to the installation of Fire Department access roadways, fire hydrants, or connections. This includes the potential growth of trees and/or other vegetation over the years.

Divided Entryway

A divided entryway can present a challenge to emergency vehicles. The required width of the driveable surface in a divided entryway is based on the width of the entryway and that of the street fronting it.

- ❑ If the street fronting the divided entryway is 28 feet wide, each lane of the entryway must be at least 15 feet wide.
- ❑ If the street fronting the divided entryway is 34 feet wide, the entryway lanes may be less than 15 feet wide, but cannot be less than 12 feet wide.
- ❑ For fronting streets wider than 34 feet, entryway lanes must be at least 12 feet wide.

No Parking Signage

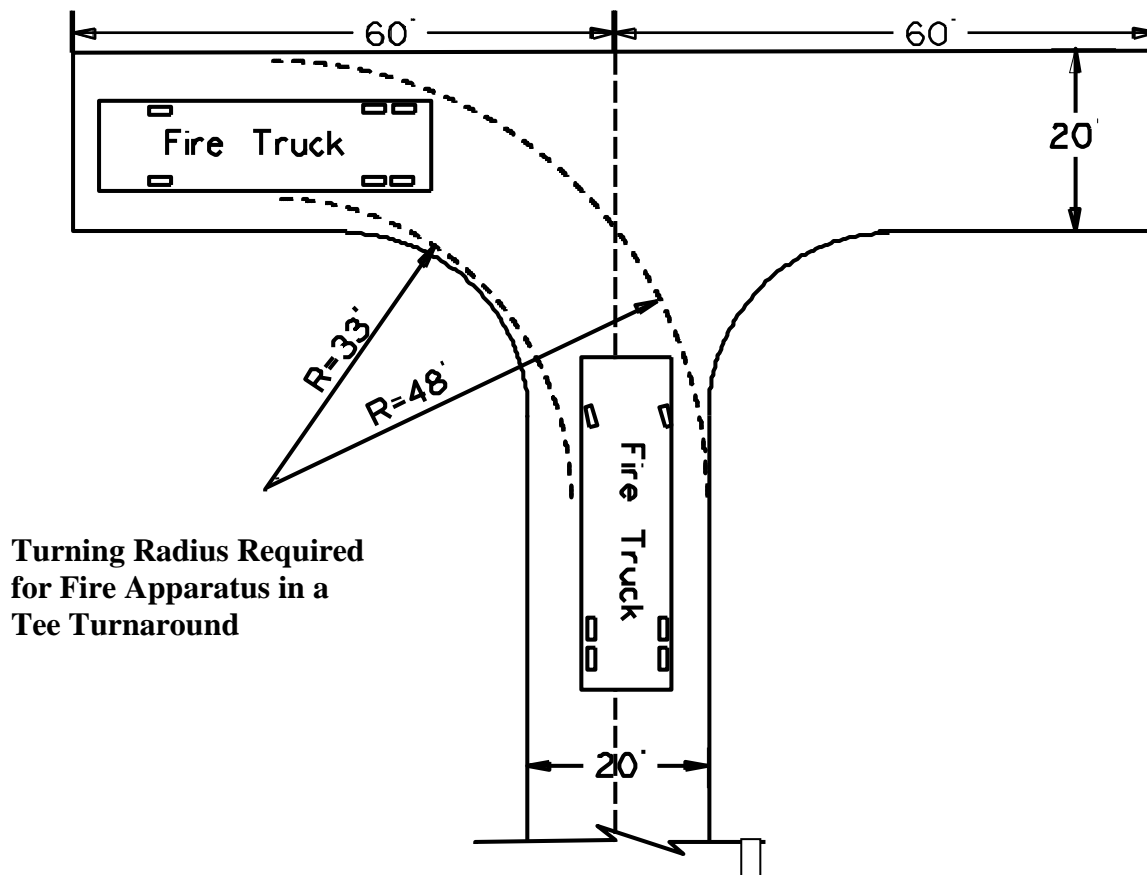
For access routes less than 28 feet wide and for fire apparatus turnaround areas, vehicle parking is not allowed. **No Parking** signs are required. An approved design for the signage is shown in the Transportation Engineering Design Standards, available from the City of Grand Junction Department of Public Works.

- ❑ For access routes 16 to 22 feet wide, *No Parking* signs are required along both sides of the route.
 - ❑ For access routes 22 to 28 feet wide, *No Parking* signs are required along one side of the route.
 - ❑ For **Hammerhead Tees** and **Alternative Turnarounds**, *No Parking* signs are required along both sides of the area.
 - ❑ For **Cul-de-sacs**, *No Parking* signs should be placed along the outside of the turnaround area.
-

DESIGN STANDARDS

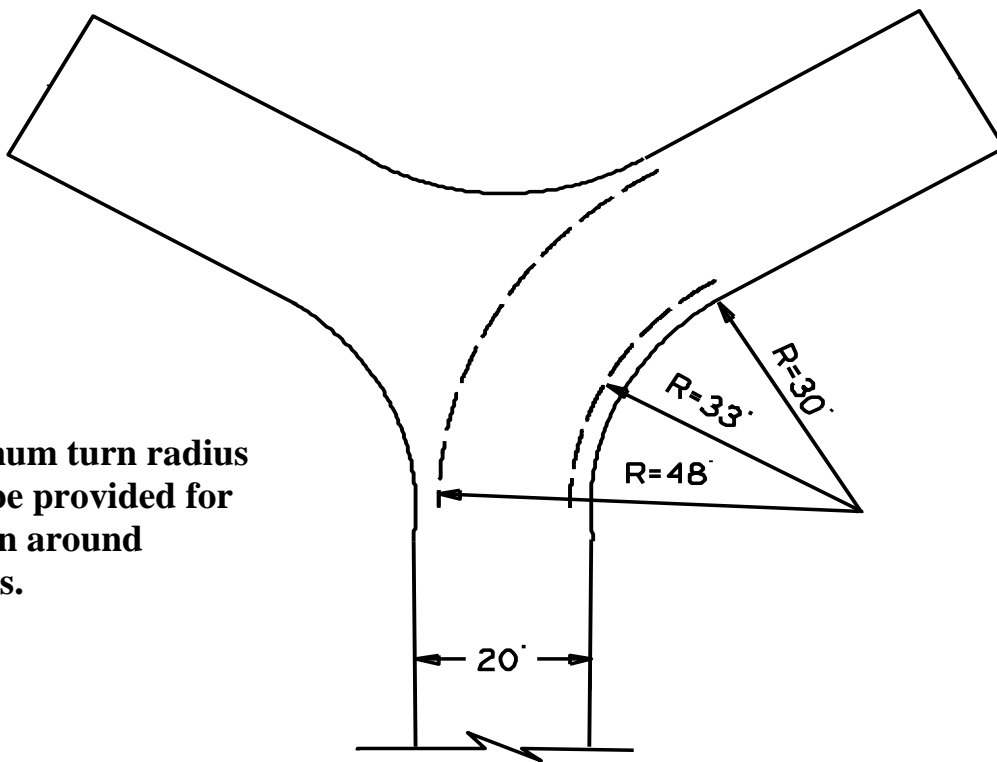
The following pages give examples of Grand Junction Fire Department approved roadways, turnarounds, and turning radius specifications. The last of these pages may be photocopied onto a transparency as a template for Fire Department turn radius requirements. This is the template used by the Fire Prevention Bureau when reviewing plans to determine proper access and is based on the actual size of our fire fighting apparatus.

Hammerhead Tee Turnaround

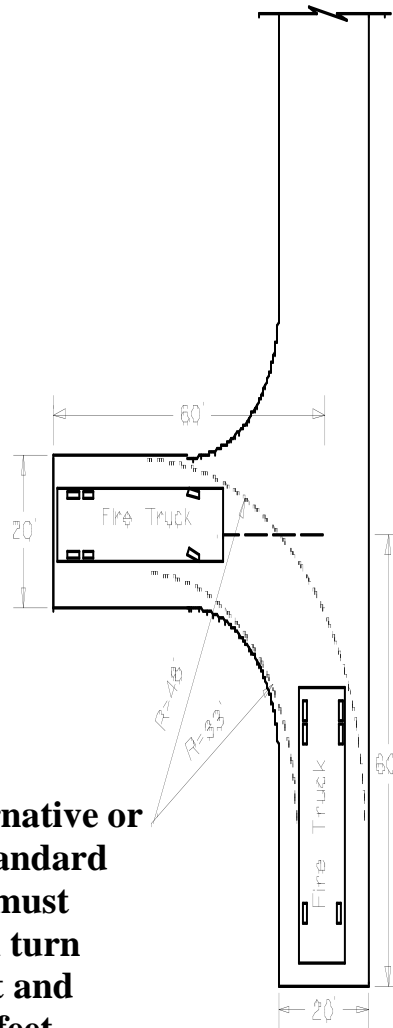


Alternative Tee Turnaround

Minimum turn radius must be provided for all turn around designs.



Alternative Turnaround

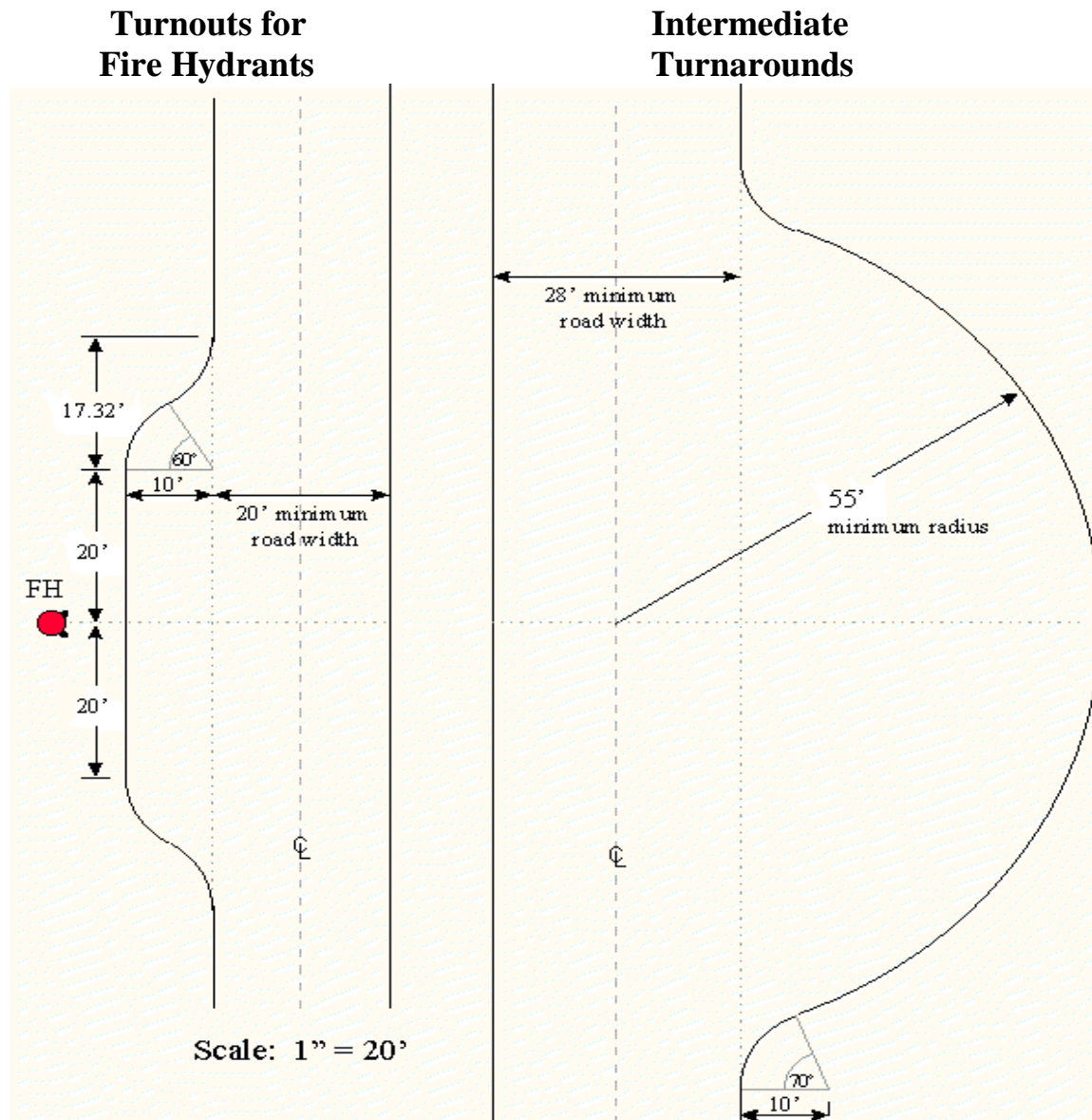


Any proposed alternative or variation from a standard Hammerhead Tee must meet our minimum turn radius requirement and provide at least 60 feet length for the turning areas.

Other Fire Department Turnarounds and Clearances

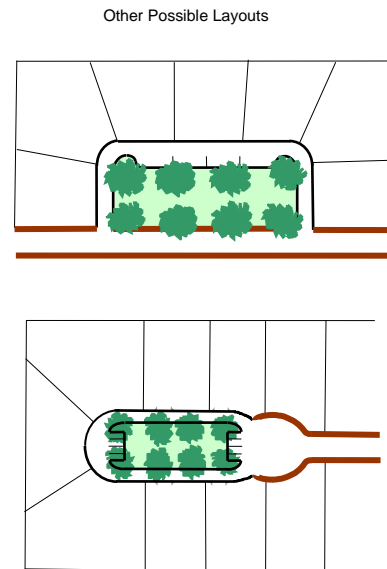
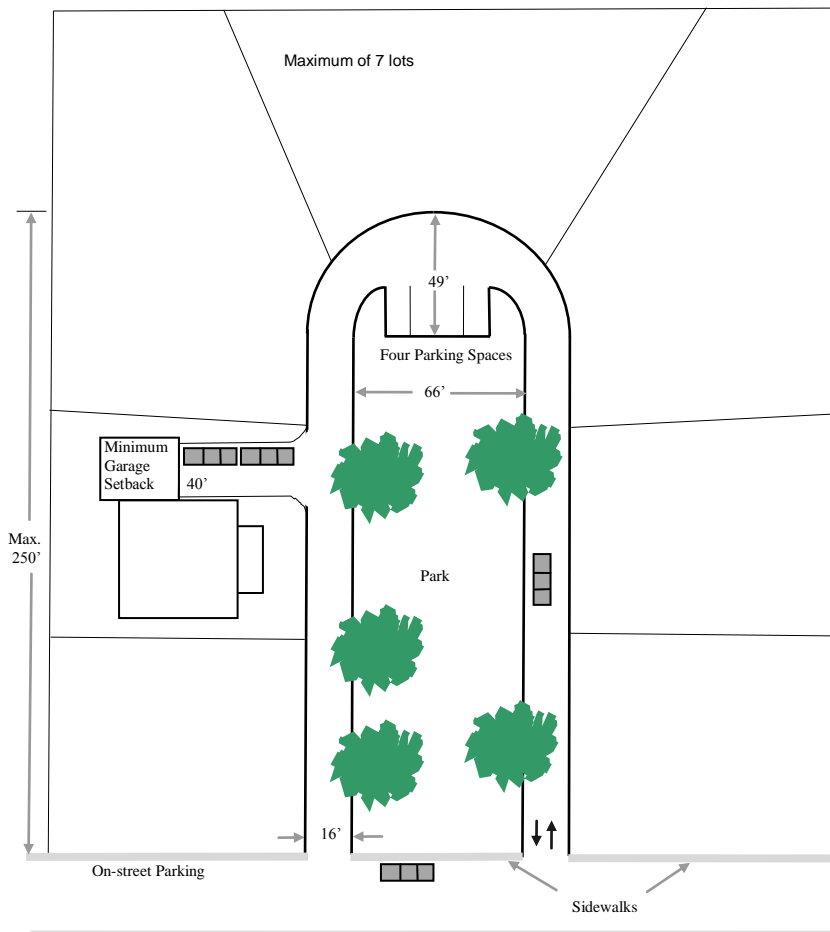
Turnouts for Fire Hydrants: For emergency access routes less than 22 feet wide, where fire hydrants are required along the route, a turnout area for fire trucks is required. The width of the access road must be at least 20 feet in the area of the turnout. This turnout area is required so that when a fire truck utilizes the fire hydrant in an emergency, the access route will still be available for use by other emergency vehicles.

Intermediate Turnaround Areas: In cases where a single point of access exceeds 600 feet in length, intermediate turnaround areas are required. The width of the access road must be at least 28 feet in the area of the turnaround. These areas allow emergency vehicles to turn around without having to drive to the end of a long dead-end road. The intermediate turnarounds must be provided at a maximum interval of every 500 feet.



Looped Lane Standards

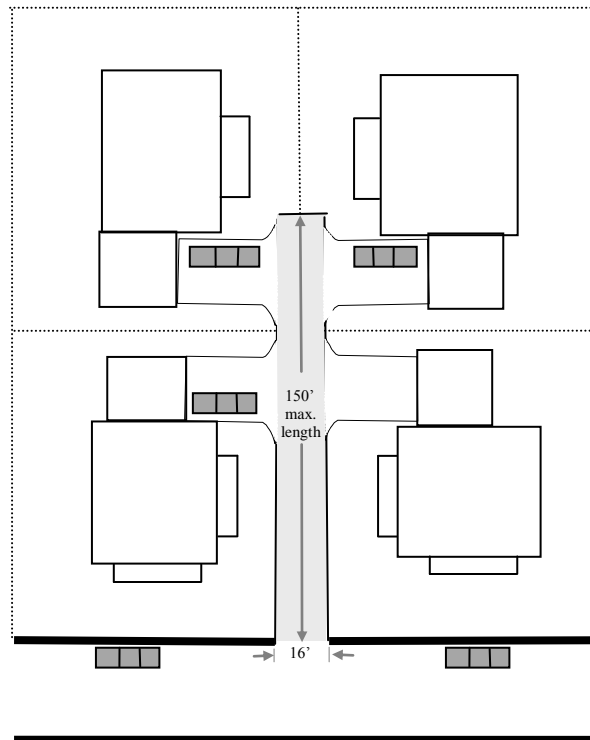
1. No more than seven single family residences may obtain access from the fire loop lane;
2. The sixteen foot wide fire loop lane shall consist of an all-weather clear surface;
3. No curve on any portion of the flow line of the fire loop lane shall have an inside radius of less than 33 feet and an outside radius of less than 48 feet. "Flow line" means the area between the curbs or equivalent if curbs are not present.
4. No portion of the fire loop lane shall extend more than 250 feet from the abutting street right-of-way.
5. A minimum of four parking spaces shall be constructed at the end of the fire loop lane, as indicated on the diagram.
6. The fire loop lane and parking stalls, as indicated on the diagram, are dedicated to and maintained by the City;
7. Two-way traffic is allowed;
8. No parking signs and markings, as required by the City, shall be installed and maintained so that no parking is allowed between the curbs on any traveled portion of the fire loop lane;
9. Corner lots that front the fire loop lane and the abutting street shall be required to only obtain access from the fire loop lane.
10. No garage or carport built on a lot obtaining access from the fire loop lane shall be constructed of any portion of which is closer than 40 feet from any portion of the fire loop lane;
11. Each residence obtaining access from the fire loop lane shall provide and maintain four parking spaces between the garage or carport and the fire loop lane; and
12. The fire loop lane shall only connect to a street where on-street parking exists now and is expected to remain, according to the City Engineer, based on such factors as the City capital program and any adopted street plans.



Shared Driveway Standards

1. A shared driveway shall be owned and maintained by the owners of the parcels or lots which abut the shared driveway;
2. No more than four single family lots shall abut or touch any portion of the shared driveway, and no more than four single family units may access a shared driveway;
3. A shared driveway shall be at least 16 feet wide and no longer than 150 feet;
4. No parking is allowed on the shared driveway;
5. Each lot abutting a shared driveway must provide 4 on-site parking spaces.
6. Each lot abutting a shared driveway must access off the shared driveway unless varied at time of subdivision approval; and
7. A shared driveway may be used only where it intersects a street where on-street parking exists and is expected to remain, according to the City Engineer, based on such factors as the City capital program and any adopted street plans.

Example Layout



11