



Guideline for Fire Access Roadways

Fire access roadways shall be provided for every facility, building, and residence, and shall extend to within 150 feet of all portions of the buildings exterior first story as measured along an approved route. Fire access roadways shall be designed as per this document, the currently adopted edition of the California Fire Code, the [City of Oceanside Municipal Code](#), and the [City of Oceanside Engineering Design Manual](#).

A. Width of Fire Access Roads

1. Commercial/Multi-Family Residential

- a. The minimum width of a fire access roadway is 28 feet.
 - i. The width of fire department access roads is measured from top face of the curb to top face of the curb on streets with curbs and gutters, and from flow line to flow line on streets with rolled curbs.
- b. For buildings that are more than 35 feet in height, a 35-foot unobstructed fire lane shall be provided.
- c. One-way traffic lanes are permitted to be no less than 14 feet in width.

2. One-and-two family dwelling private drives and driveways

- a. Private drives serving no more than two single family dwellings shall be constructed with a minimum 16-foot-wide pavement section. Please see attachment #1.
- b. Private drives serving three single family homes shall be constructed with a minimum 20-foot-wide pavement section.
- c. Private drives serving more than three to a maximum of nine single family homes shall be constructed with a minimum 24-foot-wide pavement section.
- d. Private drives serving more than nine single family homes shall be a minimum of 28 feet in width.

B. Location of Fire Apparatus Access Roads

1. The edge of fire access roadways shall be located between 10 and 30 feet from the building.
2. The edge of fire access roadways serving structures four or more stories in height shall be located between 15 and 30 feet from the building.

* These distances are measured from the face of the building to the top edge of the curb face or rolled curb flow line nearest the structure. Actual distance is a function of overall building height, with consideration given to building construction, presence of openings, and other potential hazards*

C. Fire Apparatus Access Road Design

1. Fire access roadways shall be designed, constructed, and maintained to provide all-weather driving capabilities and to support imposed loads of a total weight of 78,000 pounds.
2. When a bridge is required as part of a fire access road, it shall be in accordance with the Engineer's Design and Processing Manual and designed and constructed to accommodate a total weight of 78,000 pounds.



D. Number of Fire Apparatus Access Roads Required

1. One access road is required if any portion of the buildings first story exterior wall is located more than 150 feet from the nearest public roadway. Access is measured by an approved route around the exterior of the building. Please see attachment #2.
2. More than one access road is required if it is determined that access by a single road may be insufficient due to any factor that could limit access or impair the single-entry point. Supplementary access points shall be located to facilitate evacuation and emergency operations and minimize the possibility of multiple access points being subject to congestion or obstruction during an emergency incident.
3. A new residential community exceeding 100 multi-family dwelling units or with 50 or more one-and-two family dwelling units shall be required to have two fire apparatus access roads into the community. Residential communities located within the Very High Fire Zone (VHFZ), as determined by CALFIRE, shall require a secondary fire apparatus access road when there are 30 or more dwelling units of any kind. (Please note; Emergency Vehicle Access (EVA) only routes will not be permitted in the VHFZ).
4. Commercial or industrial developments require secondary access when the buildings or facilities have a gross building area of more than 100,000 square feet.
5. Where two or more fire apparatus access roads are required, the location of each access road shall be approved by the Fire Department. Please refer to attachment #3 for the design of two access roads.

E. Parking Restrictions

No parking is permitted on streets 28 feet in width or narrower. Parking on one side is permitted on a roadway that is at least 32 feet but less than 36 feet in width. Parking on two sides is permitted on a roadway 36 feet or more in width. Please see attachment #4.

F. Vertical Clearance

Fire access roads shall have an unobstructed vertical clearance of not less than 13 feet 6 inches. Please see attachment #5.

G. Fire Apparatus Access Road Grade

The grade for fire access roadways shall not exceed 12% unless otherwise approved by the Fire Department and Engineering Department.

H. Dead-end Access Roadways

Dead-end roadways in excess of 150 feet shall be designed and constructed with approved turnarounds or hammerheads. Turnarounds shall meet the turning radius requirements identified above. Dead end streets shall not exceed 500 feet in length unless otherwise approved by the Fire Department and Engineering Department. Please see attachment #6.



I. Inside and Outside Turning Radii

1. The inside turning radius shall be 30 feet or greater. The outside turning radius shall be 50 feet or greater. Please see attachment #6.
2. When an "S Curve" roadway design is used, a 56-foot straight leg is required between the turns in a compound curve to provide sufficient recovery distance for the apparatus. Please see attachment #7.

J. Fire Access Roadway Identification

Fire lane identification will be required when it is necessary to restrict parking of vehicles in order to maintain the required width of fire access roadways for emergency vehicle use. Please refer to our [Fire Master Plan](#) document for all fire lane requirements.

K. Vehicular Roadway Gates

When manual or automatic vehicular gates are installed across a fire access roadway, the gates shall fully open to provide the minimum clear width of the required roadway width. Gates shall be installed and meet requirements set in the City of Oceanside Municipal Code. Please see attachments #8 and #9.

L. Angles of Approach/Departure

The angle of approach and angle of departure of a fire access roadway shall not exceed seven (7) degrees (12 percent) unless otherwise approved by the Fire Code Official.

M. Traffic Calming Devices

Traffic calming devices shall be prohibited unless otherwise approved by the Fire Code Official and in accordance with the City of Oceanside Neighborhood Traffic Calming Program Manual.

N. Turning Templates

1. All roadways shall be designed based on Oceanside Fire's worst turning fire apparatuses. Please see attachments #10 and #11 for the turning templates for our Tiller Truck and for our 105' Ladder Truck to help aid in the design of all roadways.
2. Private driveways serving no more than two dwellings are permitted to base their road design using attachment #12 for our Type 1 Fire Engine.



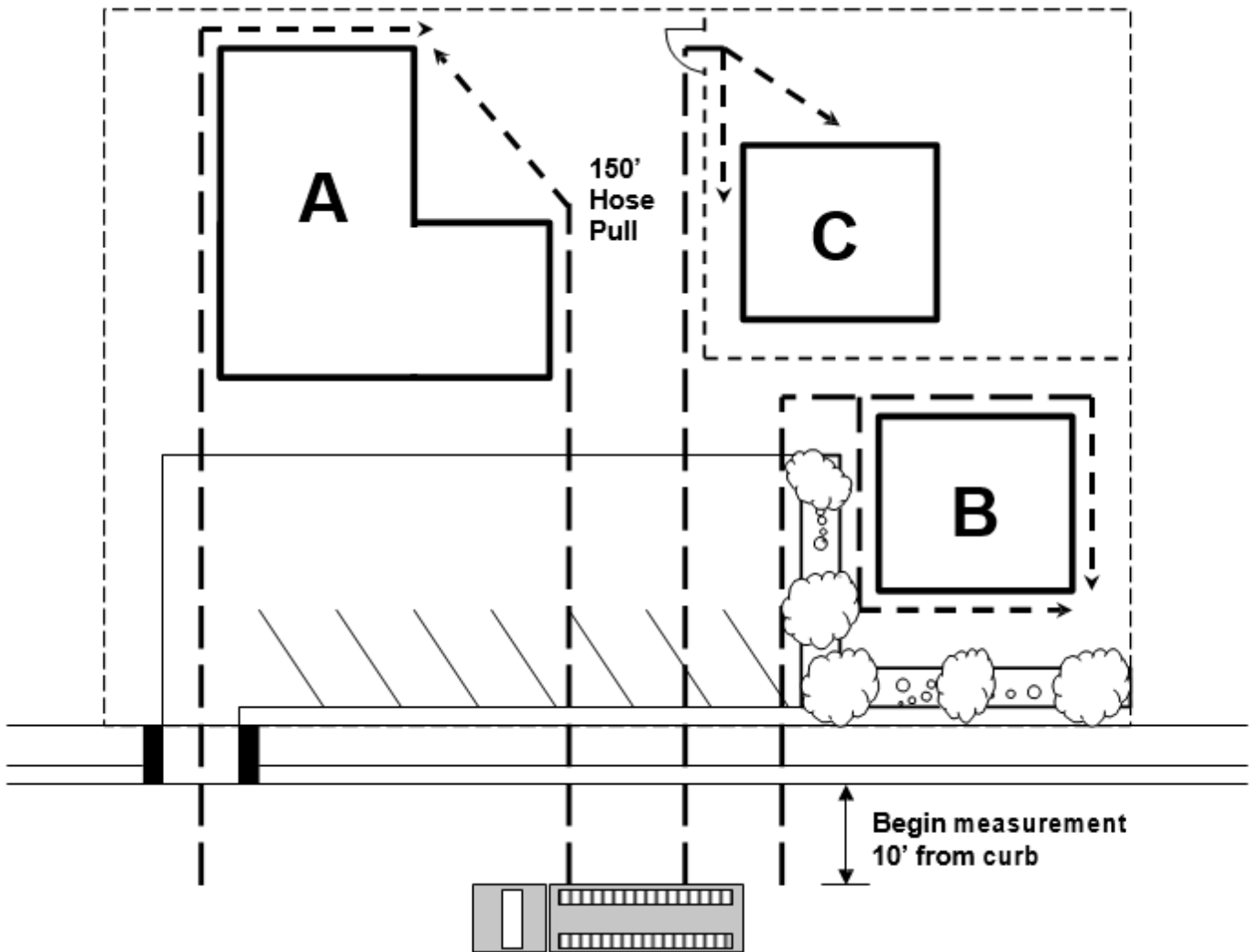
Attachment 1 – Single-Family Residence Driveway Width



The minimum width of a driveway serving a single-family residence is 16ft.



Attachment 2 – 150' Hose Pull

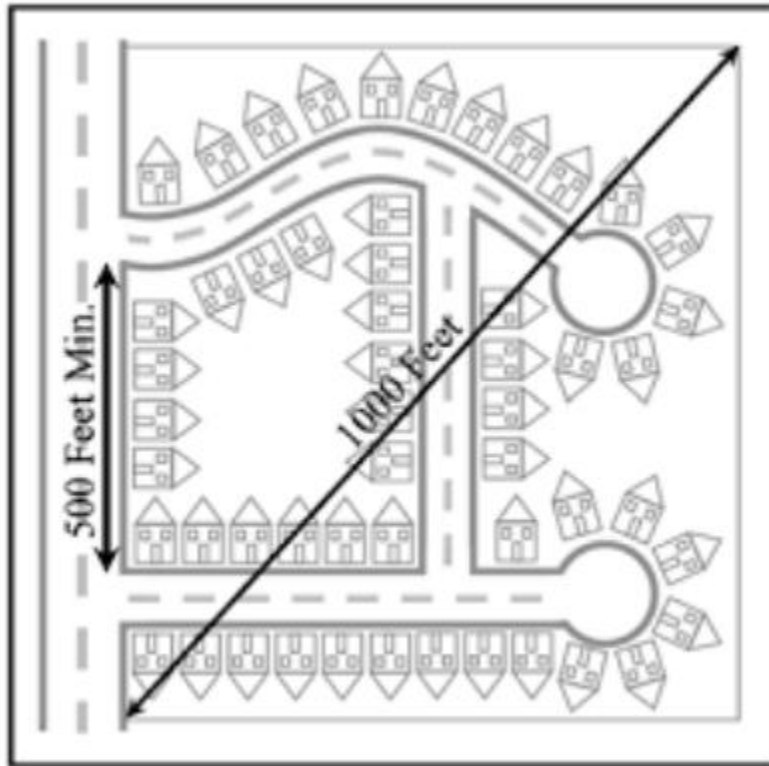


Assume that the parking lot is not accessible to fire apparatus due to turning radii and fire lane widths less than the required minimums.

- All portions of building A **are** within 150' of the public road as measured along the path of firefighter travel.
- Building B **is** also accessible despite the obstruction presented by the planer and hedges.
- Building C **is not** accessible; the presence of a chain-link fence forces firefighters to backtrack once they pass through the gate, increasing their travel distance beyond 150'. On-site fire access roadways or a change in the location of the gate and would be necessary to provide access to Building "C".



Attachment 3 – Two Points of Fire Apparatus Access

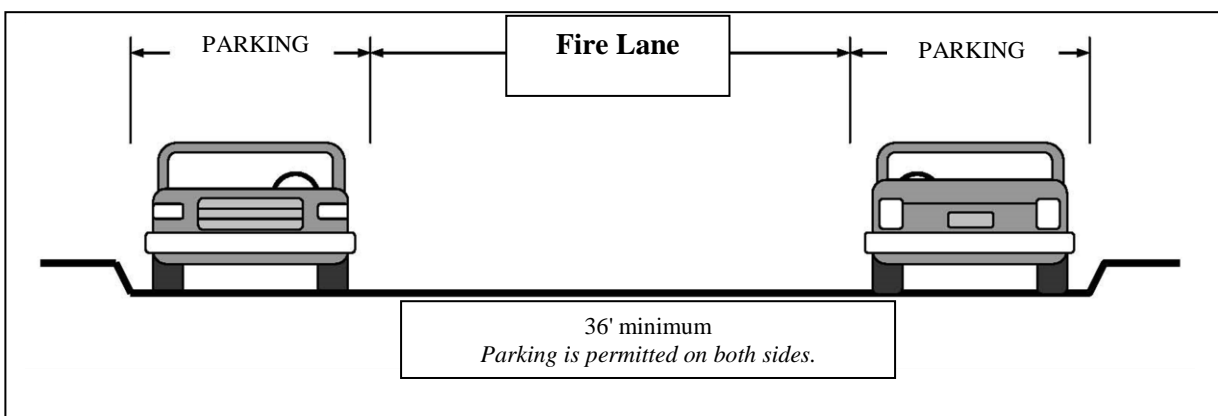
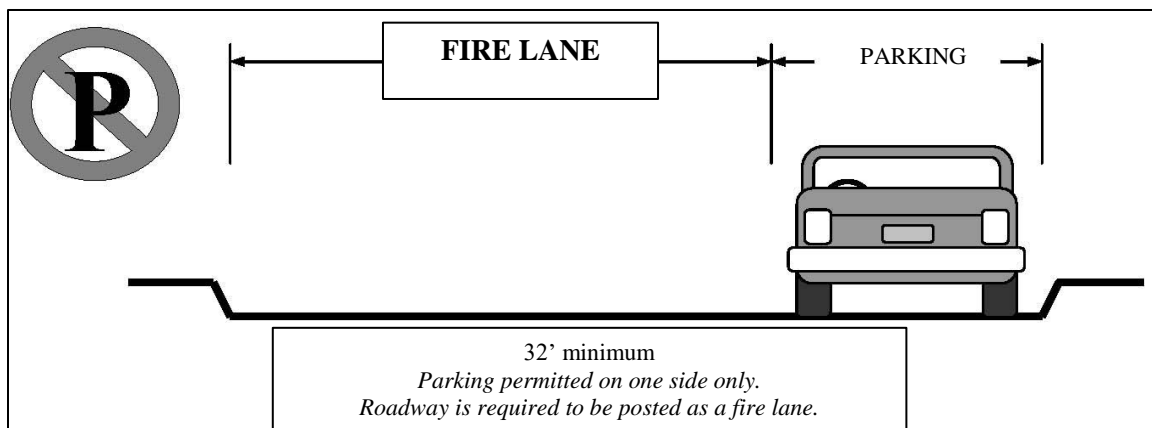
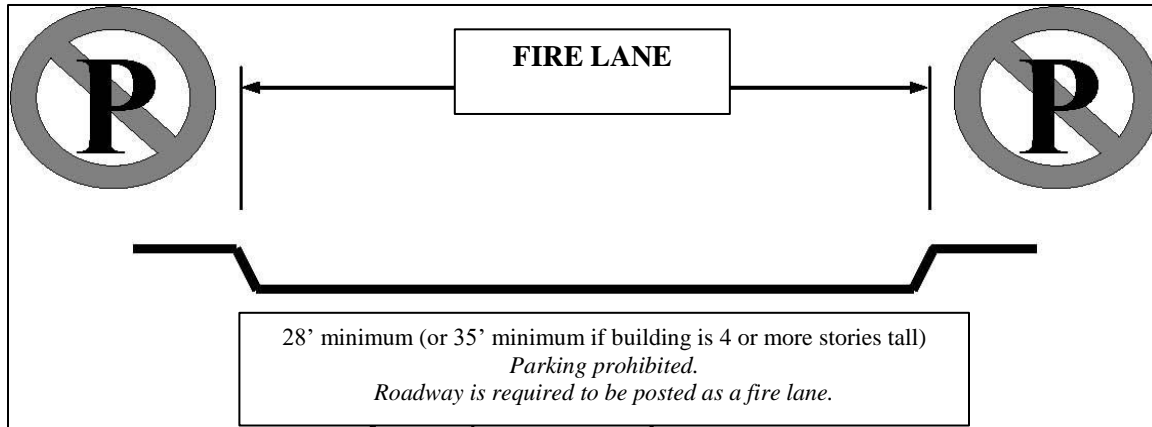


When two points of fire apparatus access is required, the two points shall be placed a distance apart equal to not less than one-half of the length of the maximum overall diagonal dimension of the property or area to be served, measured in a straight line between accesses. Location of the roads shall be approved by the Fire Department.



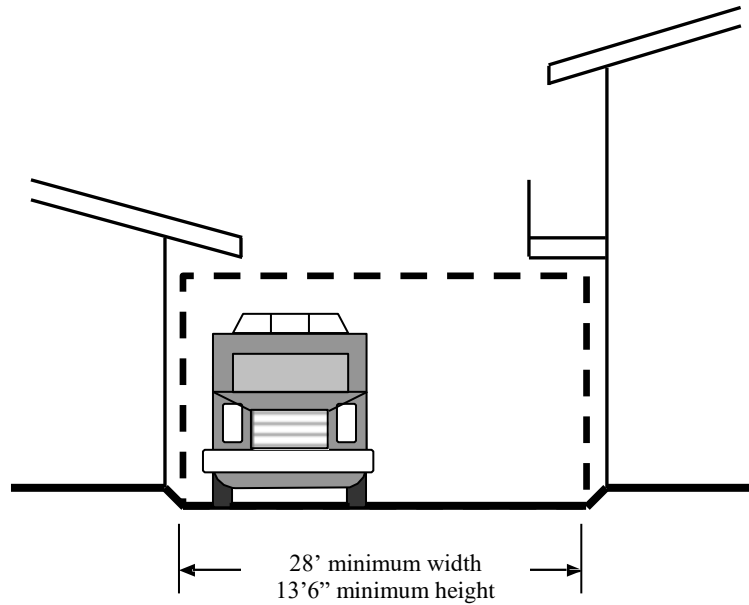
Attachment 4 – Minimum Road Widths

Measured from the top face of curb to top face of curb, or flow line to flow line.



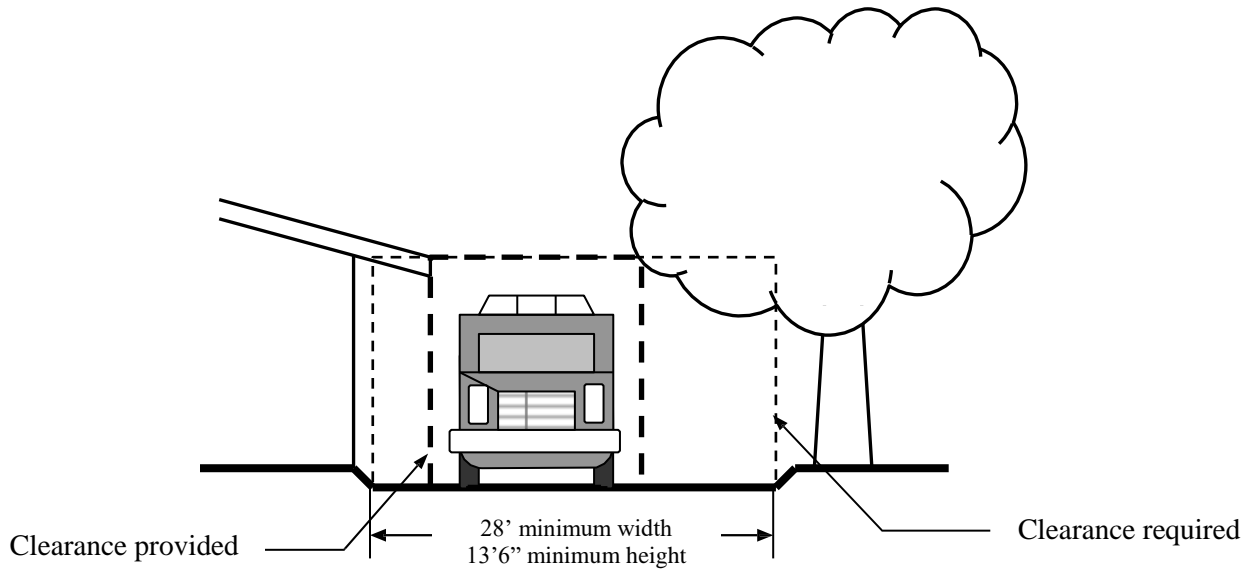


Attachment 5 - Fire Apparatus Access Roadway Clearance



PROPER CLEARANCE PROVIDED

Eaves, balconies, and other obstructions do not encroach upon the 28' wide by 13'6" high fire access roadway envelope.

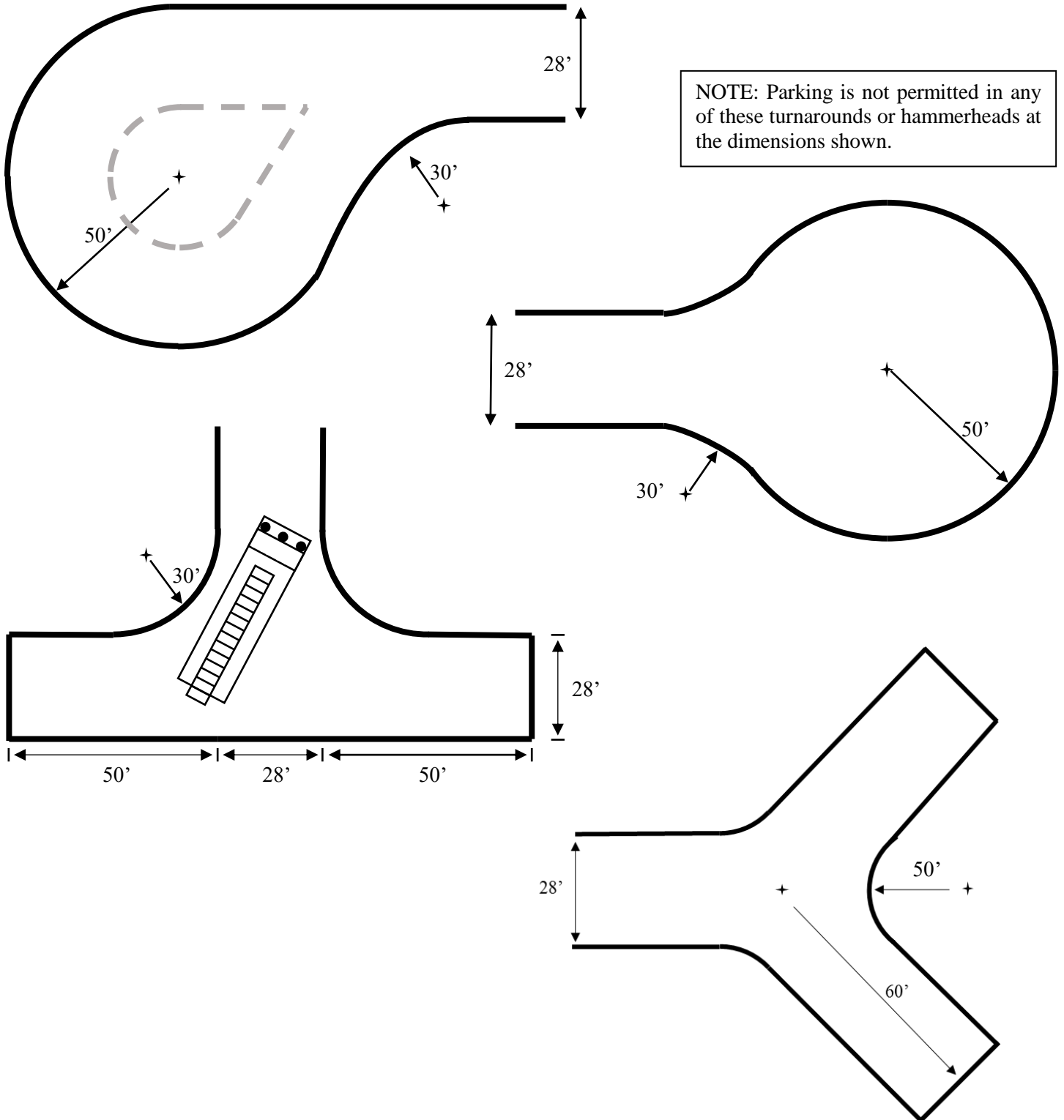


INSUFFICIENT CLEARANCE

A 28' wide roadway has been provided, but eaves and vegetation reduced the clear dimensions below required minimum



Attachment 6 – Minimum Turnaround and Hammerhead Dimensions





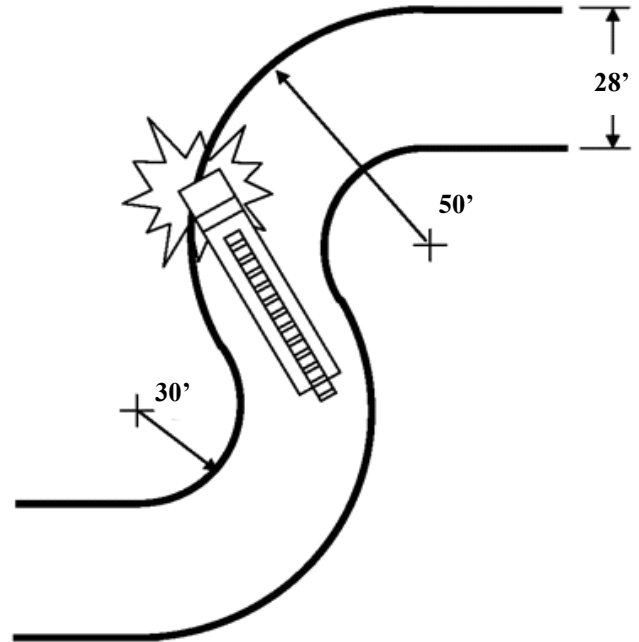
Attachment 7 – Roadway and “S” Curves

Not Permitted

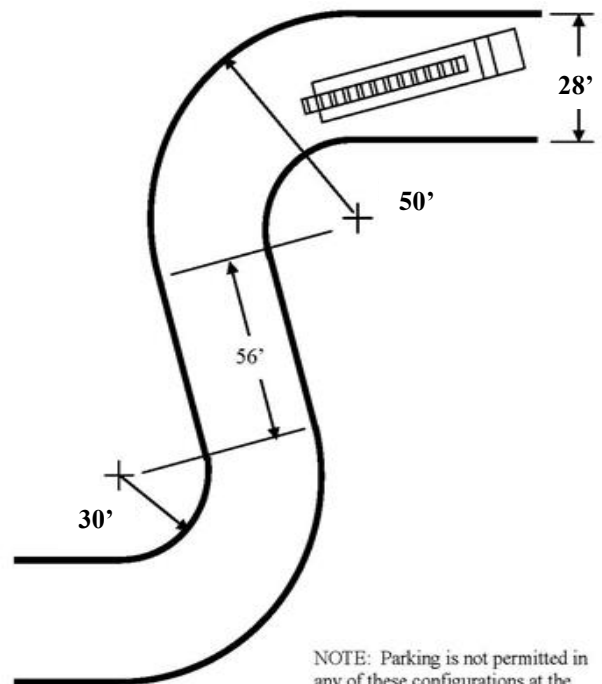
Oceanside Fire Department apparatus are unable to negotiate tight “S” curves, such as the one shown to the right.

A 56’ straight leg is required between the turns in a compound curve to provide sufficient recovery distance for the apparatus. Alternatively, the length of the straight leg may be reduced if the road width and/or turning radii are increased to allow for a wider turn. (See below)

NOT PERMITTED



PERMITTED

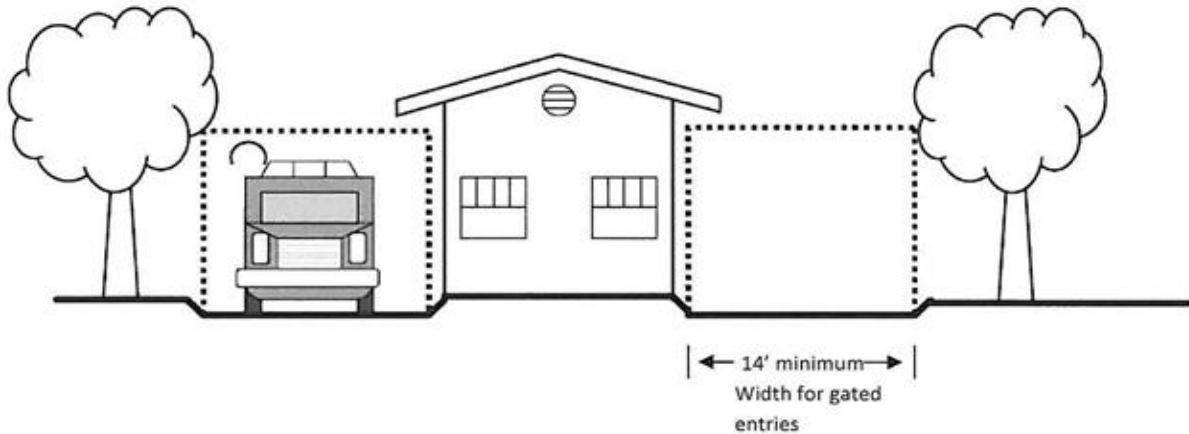


NOTE: Parking is not permitted in any of these configurations at the dimensions shown.



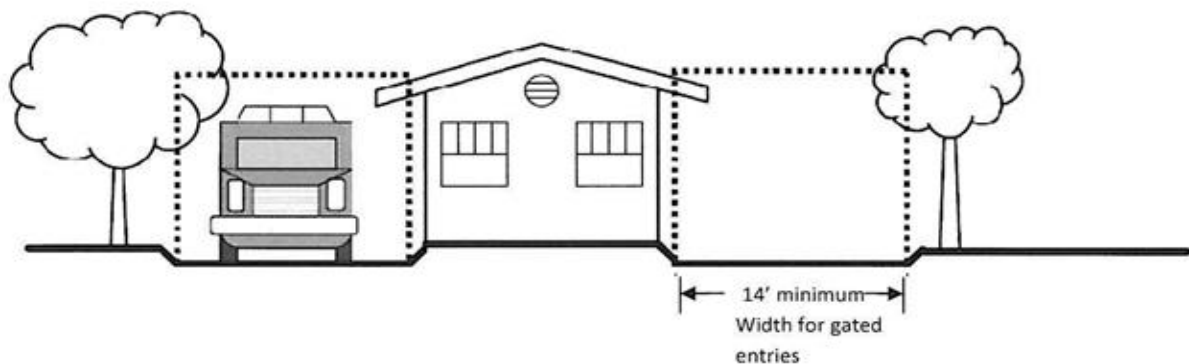
Attachment 8 - Fire Apparatus Access Roadway Clearance for a Typical Gated Community Guard House

Fire lane width reductions detailed below are applicable only to the area immediately adjacent to the guard house or gates. Roads leading up to and beyond the guard house or gate shall meet standard fire lane width requirements.



Proper Clearance Provided

Eaves and vegetation do not encroach upon the 14'-wide by 13'6" high minimum dimensions allowed for the fire access roadway next to the guard house.



Insufficient Clearance

While a 14'-wide access roadway is provided next to the guard house, eaves and vegetation encroach upon the minimum clear height of the fire lane.



Attachment 9 – Gate Width



When a vehicular gate is placed in the fire access roadway, it shall meet all requirements set in the City of Oceanside Municipal Code. Additionally, it shall open to the full clear required width of the road in which it serves.

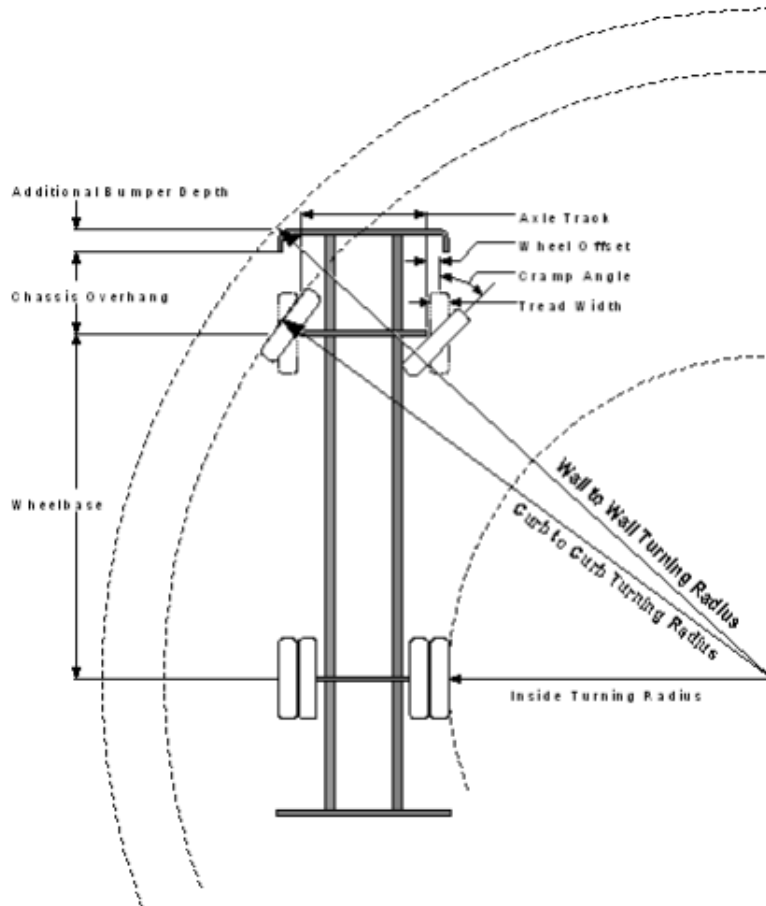


Attachment 10 – Tiller Truck Turning Template (NOTE: Full length of Tiller Truck is 60 feet)



Turning Performance Analysis

12/16/2011



Parameters:

Inside Cramp Angle:	40.00 °
Axle Track:	82.92 in.
Wheel Offset:	5.30 in.
Tread Width:	17.80 in.
Chassis Overhang:	82.44 in.
Additional Bumper Depth:	19.00 in.
Front Overhang:	101.44 in.
Wheelbase:	206.25 in.

Calculated Turning Radii:

Inside Turn:	19 ft. 4 in.
Curb to Curb:	33 ft. 6 in.
Wall to Wall:	38 ft. 5 in.

Comments:

24531 Oceanside tiller

Components	PRIDE #	Description
Front Axle	0090913	Axle, Front, Oshkosh TAK-4, Non Drive, 24,000 lb, DLX/Qtm/AXT
Front Wheels	0019618	Wheels, Frt, Alum, Alcoa, 22.50" x 13.00" (425/445)
Front Tires	0078245	Tires, Michelin, 445/65R22.50 20 ply XZY 3 tread (24,000 TAK 4)
Chassis	0517118	Quantum, Bright Finish, Side Door Chassis, PUC
Front Bumper	0550058	Bumper, 19" extended - QTM

Notes:

Actual Inside Cramp Angle may be less due to highly specialized options.

Curb to Curb turning radius calculated for a 9.00 inch curb.



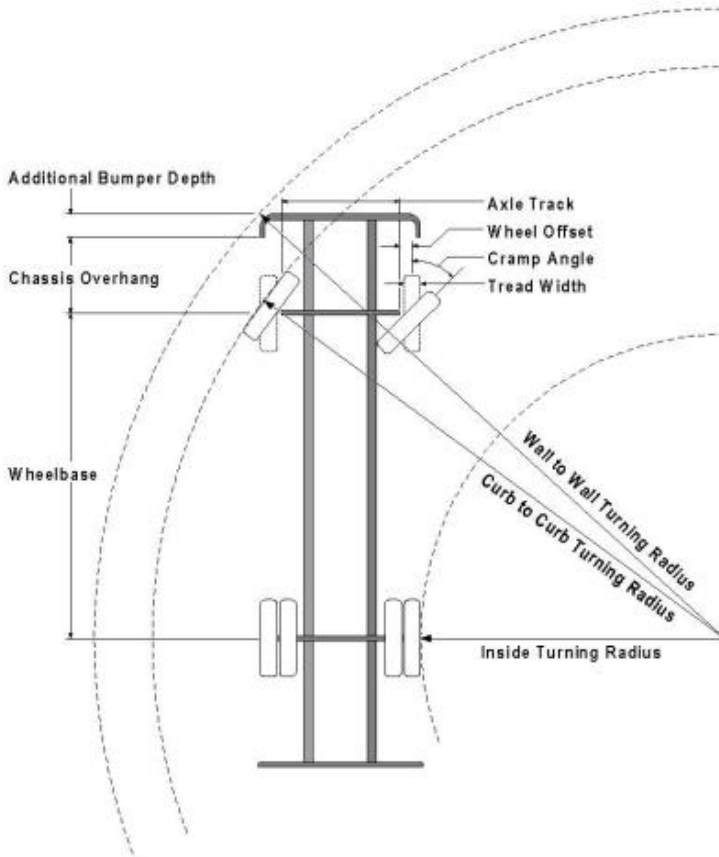
Attachment 11 – 105' Ladder Truck Turning Template

Turning Performance Analysis

02/20/2017

Bid Number: 17908TR
Department: Oceanside Fire Department

Chassis: Quantum, Bright Finish, S Chassis, Aerials/Tankers Tandem 48K
Body: Aerial, HD Ladder 105', Alum Body



Parameters:	
Inside Cramp Angle:	45°
Axle Track:	82.92 in.
Wheel Offset:	4.68 in.
Tread Width:	16.60 in.
Chassis Overhang:	82.44 in.
Additional Bumper Depth:	19.00 in.
Front Overhang:	101.44 in.
Wheelbase:	245.75 in.

Calculated Turning Radii:	
Inside Turn:	19 ft. 5 in.
Curb to curb:	35 ft. 3 in.
Wall to wall:	40 ft. 7 in.

Comments:

Category:	Option:	Description:
Axle, Front, Custom	0018453	Axle, Front, Oshkosh TAK-4, Non Drive, 22,800 lb, DLX/Enf/Qtm/AXT
Wheels, Front	0019611	Wheels, Frt, Alum, Alcoa, 22.50" x 12.25" (425/ & 385/)
Tires, Front	0078244	Tires, Michelin, 425/65R22.50 20 ply XZY 3 tread
Bumpers	0012245	Bumper, 19" extended - Sab/CC
Aerial Devices	0026901	Aerial, 105' HDL, 750# Tip Load w/Waterway

Notes:

Actual Inside cramp angle may be less due to highly specialized options.

Curb to Curb turning radius calculated for 9.00 inch curb.

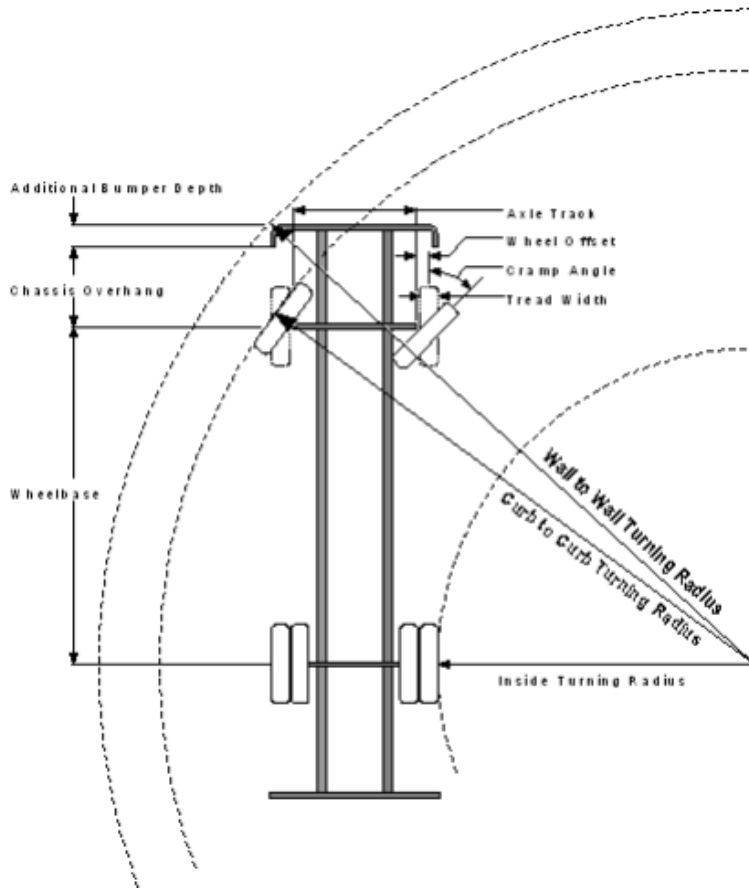


Attachment 12 – Type 1 Fire Engine Turning Template



Turning Performance Analysis

12/16/2011



Parameters:

Inside Cramp Angle:	45.00 °
Axle Track:	82.92 in.
Wheel Offset:	4.68 in.
Tread Width:	17.70 in.
Chassis Overhang:	82.44 in.
Additional Bumper Depth:	19.00 in.
Front Overhang	101.44 in.
Wheelbase:	176.25 in.

Calculated Turning Radii:

Inside Turn:	13 ft. 7 in.
Curb to Curb:	27 ft. 3 in.
Wall to Wall:	32 ft. 5 in.

Comments:

24530 Oceanside PUC pumper

Components	PRIDE #	Description
Front Axle	0018453	Axle, Front, Oshkosh TAK-4, Non Drive, 22,800 lb, DLX/Enf/Qtm/AXT
Front Wheels	0019611	Wheels, Frt, Alum, Alcoa, 22.50" x 12.25" (425/ & 385/)
Front Tires	0521238	Tires, Michelin, 425/65R22.50 20 ply XFE, Hiway Rib
Chassis	0517118	Quantum, Bright Finish, Side Door Chassis, PUC
Front Bumper	0550058	Bumper, 19" extended - QTM
Aerial Device	0529733	Aerial, 100' HAL, Tiller 2002 (500)

Notes:

Actual Inside Cramp Angle may be less due to highly specialized options.

Curb to Curb turning radius calculated for a 9.00 inch curb.