

Caltrans HDM does not set driveway sight triangles.

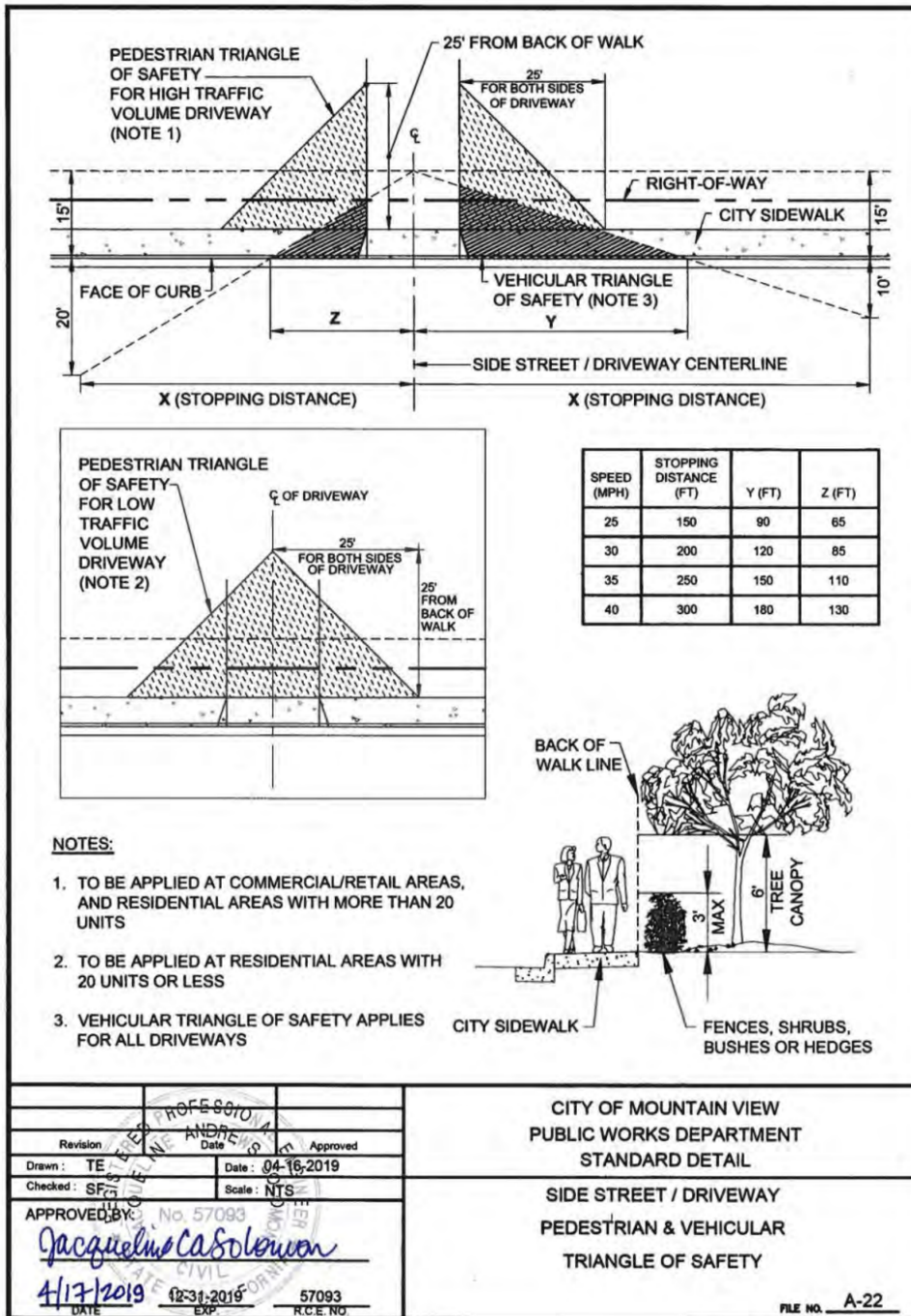
Details for driveway construction are shown on the Standard Plans. Corner sight distance requirements are not applied to urban driveways. See Index 405.1(2) for further information. (200)

At signalized intersections the corner sight distances should also be applied whenever possible. Even though traffic flows are designed to move at separate times, unanticipated conflicts can occur due to violation of signal, right turns on red, malfunction of the signal, or use of flashing red/yellow mode. The minimum value for corner sight distance at signalized intersections should be equal to the stopping sight distance as given in Table 201.1, measured as previously described. This includes an urban driveway that forms a leg of the signalized intersection. (317)

Urban Driveways (Refer to Index 205.3); corner sight distance requirements as described above are not applied to urban driveways unless signalized. See Index 405.1(2)(b) underlined standard. If parking is allowed on the major road, parking should be prohibited on both sides of the driveway per the California MUTCD, 3B.19. (317)

Sight distance requirements restrict the height of plants or the horizontal distance of plants from the traveled way. Low growing plants may be planted if the requirements for sight distance are met as discussed in Topic 201 – Sight Distance. Refer to Index 405.1(2) for corner sight distance requirements at intersections and driveways. Locate plants to maintain sight distance. (994)

The Pedestrian Triangle of Safety appears in Mountain View's most recent Standard Provisions and Details revision (2019) but not the previous revision (2005).



(A-22 from 2019)

A 2006 [paper](#) looked at cities in the SF Bay Area, cities with large populations, and cities with rapidly growing populations. The table is copied below:

Table 3.2: California City Street Tree Standards

City	Minimum Setback from Curb Return		Minimum Pruning Height		Minimum Tree Spacing		Minimum Distance from Curb
	Approach to Intersection	Departure from Intersection	Above Sidewalk	Above Traffic Lane	On Center	From Other Objects	
Anaheim ¹⁶	Signalized intersections: 25 feet for palm trees, 40 feet for others. Non-signalized intersections: 25 feet.	Signalized intersections: 15 feet for palm trees, 25 feet for others. Non-signalized intersections: 10 feet.	Not specified	Not specified	Not specified	<ul style="list-style-type: none"> • Fire hydrants: 5 feet • Roadway signs: 10 feet • Street lights: 10 feet for palm trees, 15 feet for others 	3 feet
Berkeley ¹⁷	25 feet	25 feet	Not specified	Not specified	Not specified	Not specified	Not specified
Concord ¹⁸	City follows AASHTO standards, with occasional exceptions		Not specified	Not specified	Not specified	Not specified	Not specified
Fremont ¹⁹	15 feet	15 feet	Not specified	Not specified	"Generally" 35 feet	<ul style="list-style-type: none"> • Driveways: 8 feet • Fire hydrants: 5 feet • Telephone/electrical lines: 5 feet • Street lights: 15 feet 	"Typically" 8 feet

¹⁶ *City of Anaheim Department of Public Works Standard Plans and Details*, Number 530-A (2003). Accessed 11 February 2006 <http://www.anaheim.net/depts_servc/pub_works/StandardDetails/500/530A.pdf>.

¹⁷ Telephone conversation with arborist, City of Berkeley (4 February 2005).

¹⁸ Telephone conversation with arborist, City of Concord (15 April 2005).

¹⁹ *City of Fremont Standard Landscape Details (SD-34) for City Projects and Right-of-Way*, Sheet 5 (2002). Accessed 11 February 2006 <<http://www.ci.fremont.ca.us/NR/rdonlyres/eqbjcxq2hi2n5qd7g5gakwxfk7w3foabxyy66z2dt3gkk4wpzxxlac7dtwt4d5slyy5shs6kcxvuqoccz6acbbtzpbl/Landscape+Development+Requirements+%26+Policies.pdf>>.

City	Minimum Setback from Curb Return		Minimum Pruning Height		Minimum Tree Spacing		Minimum Distance from Curb
	Approach to Intersection	Departure from Intersection	Above Sidewalk	Above Traffic Lane	On Center	From Other Objects	
Fresno ²⁰	30 feet	30 feet	Not specified	Not specified	20 feet	<ul style="list-style-type: none"> • Alleys: 15 feet • Driveways: 10 feet • Fire hydrants: 15 feet • Street lights: 20 feet • Power poles: 15 feet • Stop signs: 30 feet • Telephone/cable television lines: 3 feet 	Not specified, but must be 3 feet from adjoining property line
La Quinta ²¹	50 feet	15 feet	Not specified	Not specified	Not specified	<ul style="list-style-type: none"> • Driveways: 10 feet • Fire hydrants: 10 feet • Light poles: 20 feet 	Not specified
Los Angeles ²²	45 feet	45 feet	Not specified	Not specified	25 to 40 feet, depending on species	<ul style="list-style-type: none"> • Alley entrances: 20 feet • Crosswalks: 6 feet • Driveways: 6 feet • Electric poles: 20 feet • Fire hydrants: 10 feet • Railroad tracks: 100 feet • Street lights: 20 feet • Water and gas meters: 6 feet 	Not specified

²⁰ City of Fresno Standard Specifications, page 199 (2002). Accessed 11 February 2006 <http://www.fresno.gov/public_works/technical_library/Standard_Spec/Spec/Section26.pdf>.

²¹ City of La Quinta Infrastructure Development Standards, Standard 705 (2001). Accessed 11 February 2006 <http://www.la-quinta.org/publicworks/tract1/0_EngineeringDocs/LQ_Standards/La_Quinta_Standards.pdf>.

²² City of Los Angeles, Bureau of Street Services – Street Tree Division, “Tree Spacing Guidelines” (undated). Accessed 11 February 2006 <<http://www.lacity.org/BOSS/StreetTree/TreeSpacing.htm>>.

City	Minimum Setback from Curb Return		Minimum Pruning Height		Minimum Tree Spacing		Minimum Distance from Curb
	Approach to Intersection	Departure from Intersection	Above Sidewalk	Above Traffic Lane	On Center	From Other Objects	
Murrieta ²³	50 feet; prohibited within sight triangle	50 feet; prohibited within sight triangle	Not specified	Not specified	50 feet	<ul style="list-style-type: none"> • Driveways: 10 feet • Fire hydrants: 10 feet • Street lights: 20 feet 	Not specified
Oakland (interview with staff) ²⁴	20 feet or more, depending on signalization and speed limit	20 feet or more, depending on signalization and speed limit	Not specified	Not specified	25 to 50 feet, depending on species	Not specified	Not specified
Oakland (Street Tree Plan) ²⁵	Not specified	Not specified	Not specified	Not specified	15 to 35 feet, depending on species	<ul style="list-style-type: none"> • Driveways, commercial: 10 feet • Driveways, residential: 5 feet • Fire hydrants: 5 feet • Parking meters: 3 feet • Utility poles: 15 feet • Water/gas meters: 5 feet 	Not specified
Pleasanton ²⁶	City follows AASHTO standards, with some exceptions		Not specified	Not specified	Not specified	<ul style="list-style-type: none"> • Curb ramps: 4 feet • Driveways: 10 feet 	Not specified

²³ *City of Murrieta Standard Drawings*, Standards 214b, 615a, and 615b (1998). Accessed 11 February 2006 <http://www.murrieta.org/uploads/forms/publicworks/standard_drawings.pdf>.

²⁴ Telephone conversation with arborist, City of Oakland (17 March 2005).

²⁵ City of Oakland, Department of Parks, Recreation, and Cultural Services, *Street Tree Plan* (1998).

²⁶ Telephone conversation with arborist, City of Pleasanton (7 March 2005).

City	Minimum Setback from Curb Return		Minimum Pruning Height		Minimum Tree Spacing		Minimum Distance from Curb
	Approach to Intersection	Departure from Intersection	Above Sidewalk	Above Traffic Lane	On Center	From Other Objects	
San Diego ²⁷	25 feet	25 feet	6 feet	14 feet	Not specified	<ul style="list-style-type: none"> • Driveways: 10 feet • Fire hydrants: 10 feet • Stop signs: 20 feet • Traffic signals: 20 feet • Transformers: 10 feet • Utility poles: 10 feet 	Streets with speed limit of 50 miles per hour or greater: 7 feet. Other streets: 2.5 feet.
San Francisco ²⁸	25 feet	10 to 15 feet, depending on species	8 feet	14 feet	Not specified	<ul style="list-style-type: none"> • Fire escapes: 10 feet • Fire hydrants: 5 feet • Parking signs: 3 feet • Sidewalk furniture: 3 feet • Traffic signs: 25 feet • Utility boxes: 3 feet • Utility poles: 6 feet 	Not specified
San José ²⁹	40 feet	40 feet	Not specified	Not specified	Not specified	<ul style="list-style-type: none"> • Driveways (commercial): 10 feet • Driveways (residential): 5 feet • Fire hydrants: 5 feet • Street lights: 20 feet • Stop signs: 20 feet • Water meters: 5 feet 	Not specified

²⁷ *San Diego Municipal Code*, Sections 142.0409.a.2 and 142.0403.b.10 (1997). Accessed 11 February 2006 <<http://clerkdoc.sannet.gov/legtrain/mc/MuniCodeChapter14/Ch14Art02Division04>>.

²⁸ City and County of San Francisco, Department of Public Works, "Order No. 169,946" (1997). Accessed 11 February 2006 <<http://www.sfgov.org/site/uploadedfiles/sfdpw/buf/StreetTreeGuidelines.pdf>>.

²⁹ City of San José, Department of Transportation, "Tree Planting Setbacks" (undated; received via fax 11 April 2005).

City	Minimum Setback from Curb Return		Minimum Pruning Height		Minimum Tree Spacing		Minimum Distance from Curb
	Approach to Intersection	Departure from Intersection	Above Sidewalk	Above Traffic Lane	On Center	From Other Objects	
Santa Ana ³⁰	50 feet; prohibited within sight triangle	15 feet; prohibited within sight triangle	Not specified	Not specified	35 feet	<ul style="list-style-type: none"> • Driveways: 10 feet • Electric poles: 20 feet • Fire hydrants: 10 feet • Street lights: 20 feet 	Not specified
Stockton ³¹	40 feet, but Municipal Code authorizes trees within the line of sight if they are pruned 6 feet above the roadway	40 feet, but Municipal Code authorizes trees within the line of sight if they are pruned 6 feet above the roadway	Not specified	Not specified	40 feet	<ul style="list-style-type: none"> • Street lights: 15 feet • Street signs: 15 feet • Utility boxes: 6 feet 	Not specified
Walnut Creek ³²	Determined through negotiation with Transportation Division		8 feet	14 feet	Determined through negotiation with Transportation Division		Not specified

³⁰ *City of Santa Ana Standard Plans*, Numbers 1124 (1998), 1124B (2004), and 1125E (1990). Accessed 18 August 2005 <http://www.ci.santa-ana.ca.us/departments/pwa/engineering/design/standard_plans/street/pdf/st112a.pdf; http://www.ci.santa-ana.ca.us/departments/pwa/engineering/design/standard_plans/street/pdf/st1124b.pdf; http://www.ci.santa-ana.ca.us/departments/pwa/engineering/design/standard_plans/street/pdf/st1125e.pdf>; no longer available online.

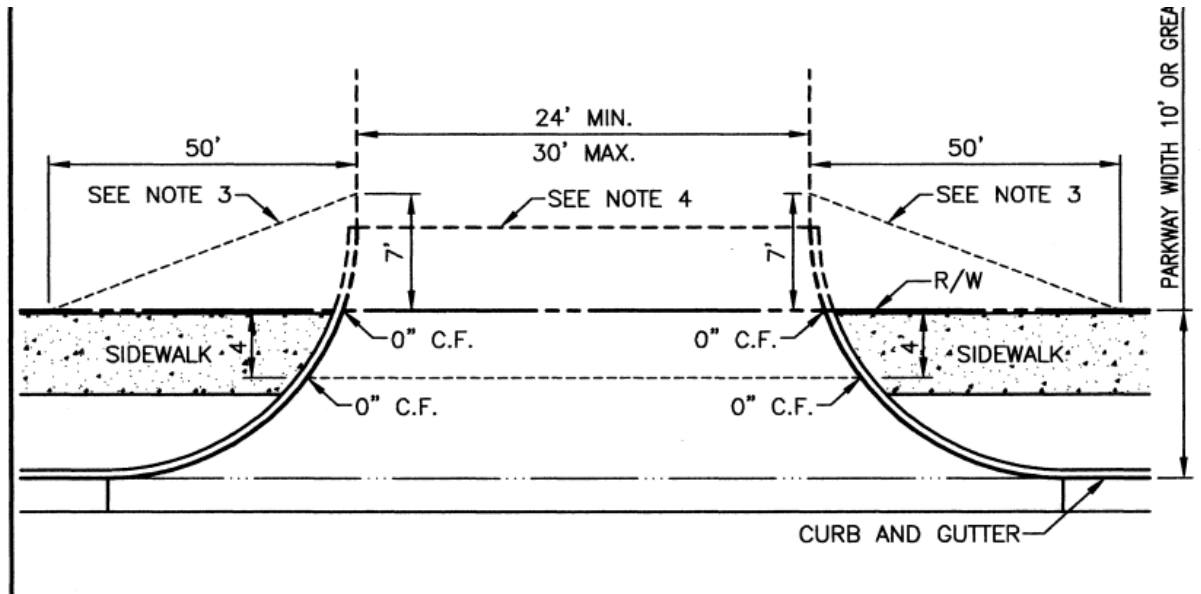
³¹ *City of Stockton Standard Drawings*, Number 5F (2003). Accessed 11 February 2006 <<http://www.stocktongov.com/publicworks/standardsandspecs/1-10.pdf>>; *City of Stockton Municipal Code*, Section 16-310.140.A (undated). Accessed 11 February 2006 <<http://www.stocktongov.com/SMC/Chapter16/Article03/Division16-310.pdf>>.

³² Telephone conversation with arborist, City of Walnut Creek (6 April 2005).

Below is an updated analysis for each city mentioned in the above paper:

Anaheim:

- The paper indicates no driveway sight triangle for trees.
- However, [Anaheim Standard Detail 115-B](#) for commercial driveways has a 50' "sight distance area" up to the beginning of the sidewalk (side opposite from the street) where there can be no visual obstruction above 24" in height. [114-A](#) for local street driveways does not appear to have any such triangle.



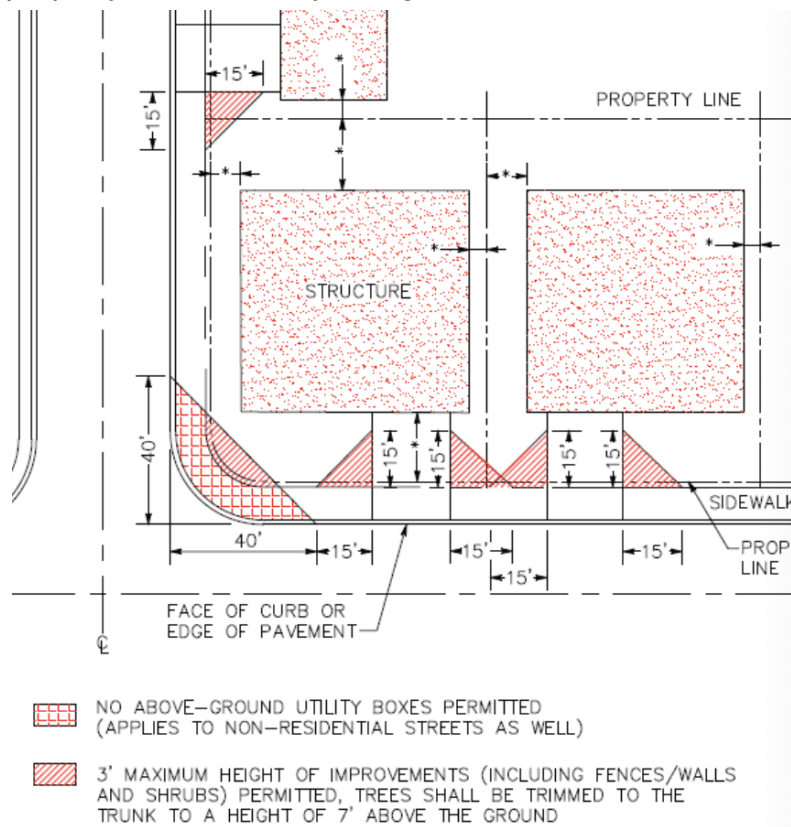
3. SIGHT DISTANCE AREA TO BE CLEAR OF ANY VISUAL OBSTRUCTION ABOVE 24" IN HEIGHT.

Berkeley:

- The paper indicates no driveway sight triangle for trees. I could not find any such triangles during my own search.
- However, relatedly, [16.44.060](#) says that news racks should not be “Within a five-foot radius of any public or private driveway, fire hydrant, police or fire call box or other emergency facility”

Concord:

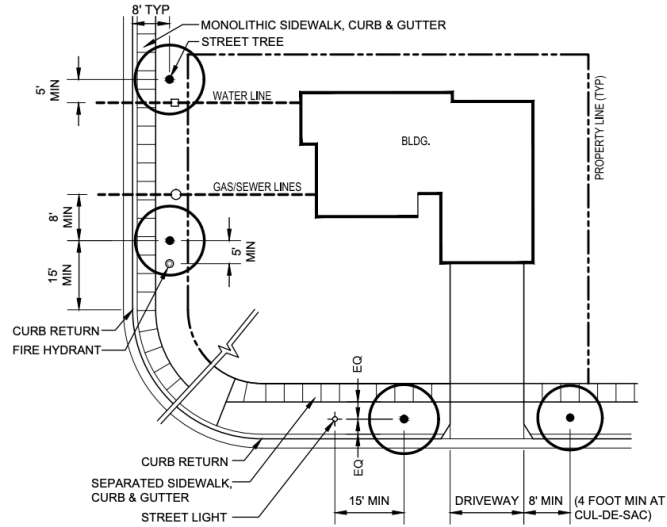
- The paper indicates no driveway sight triangle for trees. I could not find any such triangles during my own search.
- However, [18.150.170](#) appears relevant as it defines a 15' "driveway visibility triangle" up to the beginning of the sidewalk (side opposite from the street).
 - *No fence, wall, structure, sign, or vegetation/landscaping element shall exceed three feet in height within the visibility triangle created by two intersecting streets, or the intersection of a driveway with a property line*
 - *Exception: Trees with their canopy trimmed to a minimum of eight feet above grade*
 - *The driveway visibility triangle for each side of the driveway shall be determined by measuring 15 feet along the front property line, away from the driveway, beginning at the intersection of the driveway with the front property line, and measuring 15 feet along the driveway beginning at the intersection of the driveway with the front property line. The triangular area formed by connecting the outer points of each line across the intervening property is the visibility triangle.*



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- Note: there appears to be a contradiction with trees trimmed to 8 versus 7 feet.
- Note: diagram has sidewalk, code says front property line

Fremont:

- The paper indicates 8 feet from driveways.
- [Standard Details](#) (LSD-5, 2006):
 - *STREET TREES SHALL BE LOCATED 8 FEET (MIN) FROM DRIVEWAYS AND 4 FEET (MIN) AT CUL-DE-SAC.*



○ NOTE:

Fresno:

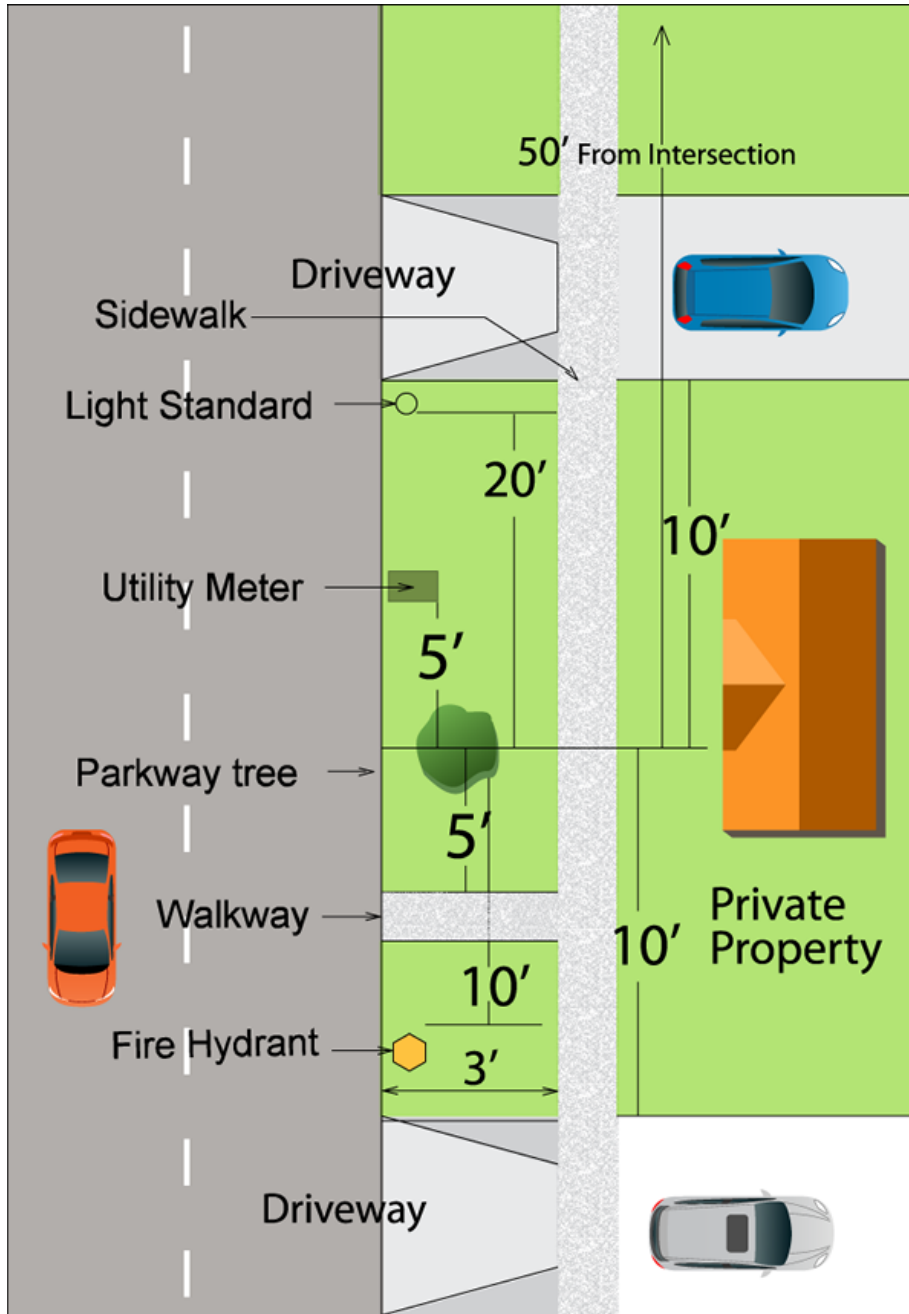
- The paper indicates 10 feet from driveways.
- Code of Ordinances [SEC 15-2018](#) Intersection Visibility says 12 feet from the edge of the right of way.
 - *Driveways and Alleys. Visibility of a driveway crossing a street lot line shall not be blocked above a height of three feet by vegetation or structures for a depth of 12 feet as viewed from the edge of the right-of-way on either side of the driveway at a distance of 12 feet. Street trees shall be pruned at least seven feet above the established grade of the curb so as not to obstruct clear view by motor vehicle drivers are permitted.*
 - *Exempt Structures and Plantings. The regulations of this section do not apply to existing buildings or new buildings in compliance with Base District setbacks; fire hydrants; public utility poles; saplings or plant species of open growth habits and not planted in the form of a hedge that are so planted and trimmed as to leave at all seasons a clear and unobstructed cross view; official warning signs or signals at places where the contour of the ground is such that there can be no cross visibility at the intersection.*
 - (no picture present for driveway triangles)

La Quinta:

- The paper indicates 10 feet from driveways.
 - No mention in standard detail for driveways, however, the standard detail for tree wells ([705](#); 2001) has 10 feet.
2. LOCATION OF TREE WELLS WILL BE SUBJECT TO THE FOLLOWING MINIMUM CONDITIONS:
 - A. 50' FROM THE BCR ON THE APPROACH TO AN INTERSECTION.
 - B. 15' FROM THE ECR ON THE EXIT FROM AN INTERSECTION.
 - C. 20' FROM LIGHT STANDARDS.
 - D. 10' FROM FIRE HYDRANTS.
 - E. 10' FROM DRIVEWAYS.

Los Angeles:

- The paper indicates 6 feet from driveways.
 - This is from [tree spacing guidelines](#). Unsure if this is required.
- [Public works for LA County](#) links a separate [diagram](#) that is a little confusing.



Murrieta:

- The paper indicates 6 feet from driveways.
- [Standard detail 615d](#) (tree wells) (2010) (page 19) says 10 feet from driveways.

- ONE TREE PER RESIDENTIAL LOT.
4. LOCATION OF TREE WELLS SHALL BE SUBJECT TO THE FOLLOWING CONDITIONS:
- A. 50' FROM CURB RETURNS
 - B. 20' FROM LIGHT STANDARDS
 - C. 10' FROM FIRE HYDRANTS
 - D. 10' FROM DRIVEWAYS

Oakland:

- The paper indicates 10 feet from commercial driveways and 5 feet from residential ones.
- Could not find anything in the code or in the [standard details](#). Unable to locate the 1998 document that was referenced in the paper.

Pleasanton:

- The paper indicates 10 feet from driveways.
- [General tips](#) to keep trees away from driveways (not requirements).
- [Hacienda](#) (within or somehow associated with Pleasanton) appears to apply the Caltrans HDM rule to driveways (recall that the HDM explicitly states it is not applied to urban driveways).

2. A safe sight distance triangle must be maintained for intersections and driveway egresses. The following criteria shall be used when designing roadway landscaping to prevent motorists' vision from being obscured by signs, trees, or shrubbery. Confirmation of adequate sight distance is the responsibility of the site developer.

Design Speed (MPH)	25	30	35	40	45	50	55	60	65	70
Corner View Distance (FT)	275	330	385	440	495	550	605	660	715	770

The corner sight distance is measured from a point: 4 feet from the centerline of the driveway or minor road, at least 15 feet from the edge of the major road pavement, and at an eye height of 3.5 feet on the minor road to an object (car) at a height of 4 feet on the major road. Refer to the current Caltrans Highway Design Manual for more details.

- Could not find anything within the [standard details](#) for driveways.

San Diego:

- The paper indicates 10 feet from driveways.
- As of 2021, this is still part of their [municipal code](#). (page 22). No specifics on how to measure are provided.

Table 142-04E

Minimum Tree Separation Distance

Improvement	Minimum Distance to Street Tree
Traffic signal, Stop Sign	20 feet
Underground Utility Lines (except sewer)	5 feet
Sewer Lines	10 feet
Above Ground Utility <i>Structures</i> (Transformers, Hydrants, Utility poles, etc)	10 feet
Driveways	10 feet ⁽¹⁾
Intersections (intersecting curb lines of two streets)	25 feet

San Francisco:

- The paper does not indicate a distance from driveways.
- I could not find one either. Checked the [standard details](#) for driveways.

San Jose:

- The paper indicates 5 feet from residential and 10 feet from commercial driveways.
- See Street Tree Planting Set Backs and Offsets (appendix f; page 139 of [this document](#))

The complete list of tree planting set backs with diagrams (vehicle line of sight, etc.) can be found in the **Appendix F, *Clearance and Setback Guidelines for City Streetscape Projects.***

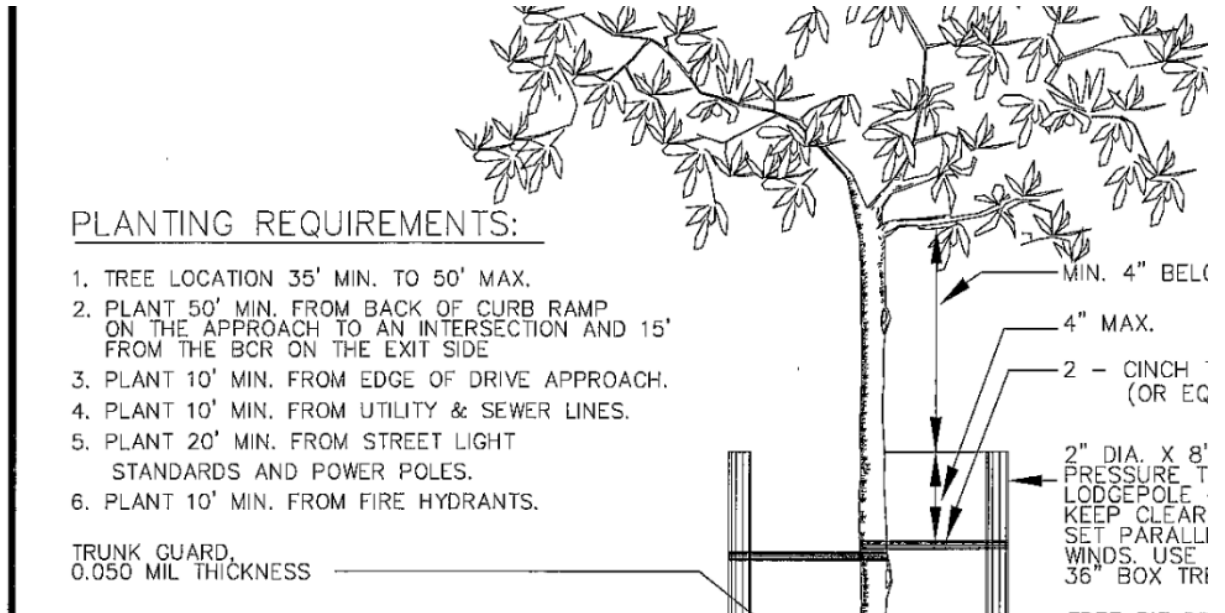


City of San Jose **Street Tree Planting** Set Backs and Offsets

Street Lights	20 Feet	To prevent blocking light & dark streets
Underground utilities	5 Feet	If they dig up utility, they do heavy damage to tree roots if tree is too close
Driveways	Residential 5 Feet Commercial 10 Feet	Trucks in & out of drive damage trees; trees also can block sight lines of vehicles backing out.

Santa Ana:

- The paper indicates street trees should be 10 feet away from driveways.
- Street Trees in tree wells should be "10' min from edge of drive approach" according to [Standard Plan planting detail 1124](#) (2016)



Stockton:

- The paper lists no rules regarding street tree distance to driveways.
- Could not find anything in the [standard details](#). Checked driveway and tree well details.

Walnut Creek:

- The paper indicates that street tree placement in relation to driveways and other structures should be "determined through negotiation with Transportation Division"
- Could not find anything online.

Additional research on county-level requirements:

Santa Clara (no fences/hedges in rural districts too close to driveways)

B. *Fences in rural districts.* Fences in A, AR, HS, RR and RS districts and A1 districts outside of urban service areas are subject to all of the following regulations:

1. Fences or hedges not exceeding six feet in height may occupy any portion of a lot within 20 feet of the edge of any street right-of-way. However, on corner lots where two or more streets intersect, Section B17-69 of the County Ordinance Code relating to sight clearance for fences and hedges applies.
2. No fence or hedge may be built in a manner that significantly obstructs the view from vehicles exiting a driveway of approaching vehicular or pedestrian traffic. Within a triangle formed by two 20-foot sides measured from the point of intersection along the edge of pavement and the edge of driveway, no fence may exceed three feet in height, unless design review approval is obtained under [Chapter 5.50](#).
3. Fences not exceeding eight feet in height may occupy any portion of a lot other than the restricted areas described in subparagraphs (1) and (2), above. This limitation shall not apply to hedges.

San Mateo (could not find anything in the code)