

**BOARD OF FORESTRY AND FIRE PROTECTION**

P.O. Box 944246  
SACRAMENTO, CA 94244-2460  
Website: [www.bof.fire.ca.gov](http://www.bof.fire.ca.gov)  
(916) 653-8007



Richard S. York Jr, RCE  
Community Resources Deputy Director – Roads  
Tuolumne County Community Resources Agency  
48 W. Yaney Avenue, Sonora  
Mailing: 2 S. Green Street  
Sonora, CA 95370

June 10, 2014

Dear Mr. York:

The State Board of Forestry and Fire Protection (BOF) has reviewed changes to Tuolumne County Code Chapter 11.12, Road Standards, as requested in your letter dated January 24, 2014. The BOF reviewed the code changes pursuant to Title 14 California Code of Regulations, State Responsibility Area Fire Safe Regulations, Section 1270.03.

The Board certifies that the ordinances in Chapter 11.12 meet or exceed those which must be addressed under section 4290 of the Public Resource Code and in 14 CCR 1270 et seq. The BOF approved the proposed Chapter 11.12 changes on June 18, 2014. The ordinances can be used by the County in place of the state minimum standards in 14 CCR 1270 et seq. The certification was conducted by the Board in consultation with CAL FIRE TCU Unit Chief Josh White.

However, we would like to bring to your attention two upcoming changes to the 14 CCR 1270 standards. The Board is updating 14 CCR 1270 et seq and expects new regulations to be adopted in late 2014 or early 2015. Additionally, a team of researchers from Cal Poly – San Luis Obispo are evaluating §1273.09 Dead-end Roads to establish a scientific standard for the length of dead end roads in the SRA. That work will be completed in late 2015, and new dead-end road standards will be adopted by the Board in 2015 or 2016.

While the Board certifies these changes to Chapter 11.12 under the existing 4290 regulations, we recommend Tuolumne County revisit their ordinances in the near future to bring their local codes into compliance with the new §1270 standards expected in 2016. Thank you for your continued dedication to ensuring fire safety in the wildlands of California.

Sincerely,

Dr. J. Keith Gillless, Chairman  
Board of Forestry and Fire Protection



## DEPARTMENT OF FORESTRY AND FIRE PROTECTION

Tuolumne-Calaveras Unit  
785 Mountain Ranch Road  
San Andreas, CA 95249  
(209) 754-3831  
(209) 754-1959 (fax)  
[www.fire.ca.gov](http://www.fire.ca.gov)



April 7, 2014

Resource Protection Committee  
Board of Forestry and Fire Protection  
PO Box 944246  
Sacramento, CA 94244-2460

Chairman Saito,

Upon review of the Tuolumne County amendment of Chapter 11 of the Tuolumne County Ordinance Code, I have concerns of the verbiage used in 11.12.040 Cul-de-sacs. My concern was the interpretation of the proposed amendment and the possibility of allowing these dead end roads to extend any further than 5280 feet in length.

In discussion with Duke York, Tuolumne County Community Resources Agency, my concerns were diminished when he explained the longest length a road could be is the length allowed by the largest zoning district. If I understand his interpretation correctly, a road serving multiple parcels with the largest being greater than 20 acres could only have a maximum of 5280 feet in length. In another example, if the largest parcel was 5 acres the longest allowable road length would be 2640 feet, regardless of the number of other parcels the road accesses.

If I am to understand the interpretation correctly, I believe this amendment would serve the citizens of Tuolumne County while also allowing fire services the ingress and egress capabilities necessary for the fuels and topography in the area.

If you have any questions or concerns, please do not hesitate to contact me.

Sincerely,

A handwritten signature in blue ink, appearing to read "Joshua White".

Joshua White  
Unit Chief  
Tuolumne-Calaveras Unit



# COMMUNITY RESOURCES AGENCY

BEV SHANE, AICP  
Director

Administration - Building - County Surveyor - Engineering - Environmental Health - Fleet Services - GIS - Housing - Planning - Roads - Solid Waste

January 24, 2014

Mr. George D. Gentry  
Executive Officer  
State Board of Forestry & Fire Protection  
PO Box 944246  
Sacramento, CA 94244-2460

48 W. Yaney Avenue, Sonora  
Mailing: 2 S. Green Street  
Sonora, CA 95370  
(209) 533-5633  
(209) 536-1622 (Fleet)  
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(209) 533-5909 (fax - EHD)  
(209) 588-9064 (fax - Fleet)  
(209) 533-5698 (fax - Roads)  
[www.tuolumnecounty.ca.gov](http://www.tuolumnecounty.ca.gov)

RE: Request for Certification of Amendments to In-Lieu Regulations

Dear Mr. Gentry:

On February 18, 1992, the Board of Forestry certified Tuolumne County's ordinances for road and fire safety standards to be used in-lieu of the State's Fire Safe Regulations which implement the provisions of Public Resources Code Section 4290. On February 6, 2012, your Board certified minor changes to Tuolumne County's road standards in Chapter 11.12 of the Tuolumne County Ordinance Code which had been approved by the Board of Supervisors on September 6, 2011.

The Tuolumne County Board of Supervisors adopted Ordinance 3239 on December 17, 2013, which again modified Chapter 11.12 of the County Ordinance Code. The modifications enacted by Ordinance 3239 add and clarify definitions and modify the basic road design and construction standards to provide more flexibility for development projects to comply with the fire safety regulations of Public Resources Code Section 4290.

The Board of Supervisors also adopted Ordinance 3241 on December 17, 2013, which repealed Chapter 15.20 of the Tuolumne County Ordinance Code (TCOC) and replaced it with a new Chapter 15.20 to eliminate regulations which are superseded by the 2013 California Fire Code and change references to be consistent with Chapters 1.10 and 11.02 of T.C.O.C.

In accordance with the provisions of the certification of Tuolumne County's in-lieu regulations, I am submitting Ordinances 3239 and 3241 for review and certification by the Board of Forestry. I am also asking for a determination that future amendments to the County's Fire Safety Standards in Chapter 15.20 to only adopt updated versions of the California Fire Code and National Fire Code do not require review and certification by the Board of Forestry.

Enclosed to facilitate your review of Ordinances 3239 and 3241 are the staff reports prepared for the Board of Supervisors meeting of December 17, 2013, including a redlined version identifying the specific changes to the County Ordinance Code enacted by those ordinances.

Please do not hesitate to contact me by telephone at 209-533-5953 or via email at [dyork@co.tuolumne.ca.us](mailto:dyork@co.tuolumne.ca.us) if you have any questions or would like additional information.

Thank you for your consideration of this request.

Sincerely,

Richard S. York Jr., RCE  
Community Resources Deputy Director- Roads

Enclosures







# COMMUNITY RESOURCES AGENCY

BEV SHANE, AICP  
Director

Administration - Building - County Surveyor - Engineering - Environmental Health - Fleet Services - GIS - Housing - Planning - Roads - Solid Waste

November 18, 2013

48 W. Yaney Avenue, Sonora  
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TO: Board of Supervisors

FROM: Richard S. York Jr.  
Deputy Director of Roads  
Community Resources Agency

RE: Ordinance Replacing Chapters 11.02 and 11.12 of the Tuolumne County Ordinance Code

## PROPOSED ACTION

Consideration of an ordinance replacing Chapters 11.02 and 11.12 of the Tuolumne County Ordinance Code to add and clarify definitions and modify the basic road design and construction standards to provide more flexibility for development projects to comply with the fire safety regulations of Public Resources Code Section 4290.

Please refer to the attached Proposed Amendments to Title 11 of the Tuolumne County Ordinance Code for the specific proposed language changes. Proposed additions are shown in red underlined text while deletions are identified by blue strikethrough text.

## LOCATION

The unincorporated area of Tuolumne County, which consists of approximately 1.4 million acres, or 2,200 square miles, and is located in the Central Sierra portion of California stretching from the San Joaquin Valley 70 miles eastwardly to the crest of the Sierra Nevada. Tuolumne County is bordered to the north by Calaveras and Alpine Counties, to the south by Mariposa and Merced Counties, to the east by Mono County and to the west by Stanislaus County. Portions of the Stanislaus National Forest and Yosemite National Park cover the easterly section of Tuolumne County.

Access to and through the County is provided by State Highways 108 and 120 which serve as east-west arterials and Highway 49 which runs through the County from Mariposa County in the south to Calaveras County in the north. Highway 132 traverses the southerly portion of the County linking the Lake Don Pedro area to Mariposa and Stanislaus Counties.

## ENVIRONMENTAL EVALUATION

Pursuant to Section 15061(b)(3) of the *State CEQA Guidelines*, a project is exempt from the California Environmental Quality Act (CEQA) when it can be seen with certainty that there is no possibility that the proposed project may have a significant effect on the environment. The proposed project entails modifying the Tuolumne County Ordinance Code by adding and clarifying definitions and modifying the basic road design and construction standards to provide more flexibility for development projects to comply with the fire safety regulations of Public Resources

Code Section 4290. These modifications constitute administrative changes to the County Ordinance Code and, as such, will have no significant adverse effect on the environment; consequently, the project is not subject to environmental review under CEQA in accordance with Section 15061(b)(3) of the *State CEQA Guidelines*.

## BACKGROUND INFORMATION

1. The purpose of Title 11 of the Tuolumne County Ordinance Code is to establish basic design and construction standards for roads in order to protect the public's health, safety, and welfare. The proposed revisions to Chapters 11.02 and 11.12 are intended to clarify existing provisions and modify the standards to provide more flexibility for development projects to comply with the State's fire safety regulations in Public Resources Code (PRC) Section 4290 regarding cul-de-sac length standards while protecting public safety on roads within the County.
2. In response to the Oakland Hills Fire and other catastrophic fires in California, the State legislature adopted PRC Section 4290 to establish fire safety standards for new development. Those standards include limitations on the length of cul-de-sac or dead end roads. Local jurisdictions are required to comply with the provisions of PRC 4290 or adopt local fire safety standards in lieu of the State standards. Local standards must provide the same practical effect as those contained in PRC 4290 and be approved by the State Board of Forestry.
3. In 1992, Tuolumne County adopted local fire safety regulations in lieu of those provided by PRC 4290 and the County's regulations were approved by the State Board of Forestry. Those in-lieu regulations are contained in Title 11 Road Standards and Chapter 15.20 Fire Safety Standards of the County Ordinance Code.
4. In accordance with the Board of Supervisors' goals to review requirements for new development, the Engineering Staff has been working with the Tuolumne County Fire Prevention Division to modify the road standards in Title 11 to allow more flexibility in compliance with PRC 4290 in a manner that is acceptable to the State Board of Forestry.
5. Staff has prepared the proposed ordinance for the Board of Supervisors' consideration. The ordinance reflects the collaborative efforts of all parties involved. The ordinance has been reviewed by County Counsel's office and by the Cal Fire local representatives.
6. The proposed ordinance includes adding definitions and clarifying existing definitions in Chapter 11.02. New definitions include those for "all weather surface," "hammerhead turnaround," "uniform surface," and "urban streets."
7. The format of Section 11.12.010 is proposed to be modified by creating a table of the required road standards. Section 11.12.010(D) is proposed to be amended to allow hammerhead turnarounds in addition to turnaround bulbs and to establish standards for hammerheads. This will facilitate safe and efficient turning movements in a smaller area than required for turnaround bulbs.
8. The format of Section 11.12.020 is also proposed to be modified by creating a table of the required structural design standards.
9. Section 11.12.040 establishes the method for measuring the length of a cul-de-sac for a road that traverses multiple zoning districts. The maximum length is determined by the zoning districts through which the road passes and, currently, the maximum length is the "shortest allowable." This section is proposed to be amended to establish the maximum length as a cumulative of those allowed by the respective zoning districts provided a turnaround bulb is provided at the boundary of each zoning district. This will address an issue that has been

raised many times by developers since the adoption of the County's in-lieu regulations. Please refer to the attached exhibit map of cul-de-sac limits attached hereto.

10. The proposed ordinance also includes modifying Section 11.12.060 to clarify provisions regarding driveways and to authorize the use of a hammerhead turnaround instead of a turnaround bulb.
11. A new Section 11.12.063 is proposed to be added to establish standards for gates on private roads and to clarify that the installation of gates across a public road is prohibited.
12. Because the proposed ordinance would modify the County's in-lieu fire safety regulations pursuant to PRC 4290, the ordinance must be approved by the State Board of Forestry after its adoption by the Board of Supervisors.
13. The Board of Supervisors Transportation Committee (BOSTC) considered the proposed ordinance at its meeting of October 28, 2013. The BOSTC endorsed the ordinance as proposed. Please refer to the minutes of the BOSTC meeting attached hereto.

## **RECOMMENDATION**

### **December 3, 2013**

It is recommended that your Board waive the first reading of and introduce the proposed ordinance replacing Chapters 11.02 and 11.12 of the Tuolumne County Ordinance Code and schedule the second reading of the ordinance for your meeting of December 17, 2013.

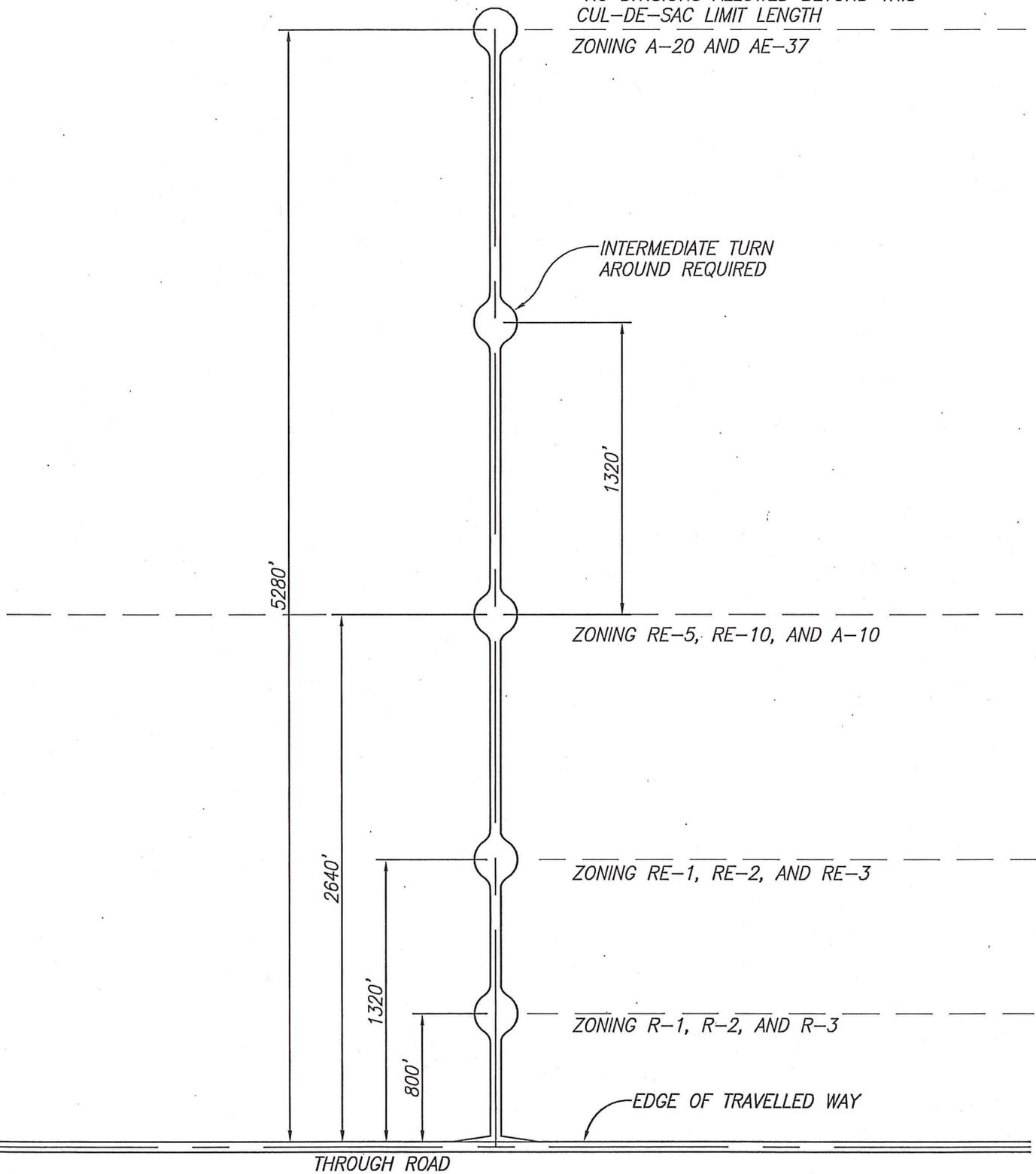
### **December 17, 2013**

It is recommended that your Board adopt the ordinance replacing Chapters 11.02 and 11.12 of the Tuolumne County Ordinance Code based upon the following findings:

- A. The proposed ordinance is consistent with the Tuolumne County General Plan.
- B. The proposed ordinance is in accordance with the Tuolumne County Ordinance Code.
- C. The proposed ordinance is in accordance with California Public Resources Code section 4290.
- D. The proposed project is not subject to review under the California Environmental Quality Act (CEQA) pursuant to Section 15061(b)(3) of the *State CEQA Guidelines*.

RSY:dc

\*NO DIVISIONS ALLOWED BEYOND THIS  
 CUL-DE-SAC LIMIT LENGTH  
 ZONING A-20 AND AE-37



\*PARCELS SERVED BY DRIVEWAY ACCESS ONLY

**TUOLUMNE COUNTY**  
 COMMUNITY RESOURCES AGENCY

2 SOUTH GREEN STREET  
 SONORA, CALIFORNIA 95370  
 PHONE (209) 533-5633  
 FAX (209) 533-5698

**EXHIBIT**  
**MAP OF CUL-DE-SAC LIMITS**

**SHEET**

SHEET 1 OF 1

SCALE

VERTICAL: 1"=NA  
 HORIZONTAL: 1"=NA

BRIDGE NO.:  
 NA

# PROPOSED AMENDMENTS TO TITLE 11 OF THE TUOLUMNE COUNTY ORDINANCE CODE

## Title 11

### ROAD STANDARDS

#### Chapters:

- 11.02 Definitions
- 11.04 Preparation of Plans
- 11.08 Inspection
- 11.10 Testing
- 11.12 Basic Road Design and Construction Standards
- 11.16 Road Standards For Commercial and Industrial Development

#### Chapter 11.02

#### DEFINITIONS<sup>4</sup>

#### Sections:

- 11.02.010 Interpretation.
- 11.02.020 Acceptance.
- 11.02.030 All weather surface.
- ~~11.02.030 Arterial road.~~
- 11.02.040 California ~~c~~Culvert ~~p~~Practice.
- ~~11.02.050 Collector road.~~
- 11.02.060~~50~~ Consulting engineer.
- 11.02.070~~60~~ Contractor.
- 11.02.080~~70~~ County.
- 11.02.090~~80~~ County engineer.
- ~~11.02.100 Cul-de-sac road.~~
- 11.02.110~~090~~ Department.
- 11.02.120~~100~~ Director.
- 11.02.130~~110~~ Driveway.
- 11.02.120 Driveway, cCommon.
- 11.02.140~~130~~ Final map.
- ~~11.02.150 Local road.~~
- ~~11.02.160 Major collectors.~~
- 11.02.170~~140~~ May.
- ~~11.02.180 Minor collector.~~
- 11.02.190~~150~~ Parcel map.
- 11.02.160 Road, Arterial.

- ~~11.02.170~~ 11.02.170 Road, Collector.
- ~~11.02.180~~ 11.02.180 Road, Cul-de-sac road.
- ~~11.02.190~~ 11.02.190 Road, Local.
- ~~11.02.200~~ 11.02.200 Road, Through.
- ~~11.02.200~~~~210~~ 11.02.210 Off-site Road, Offsite.
- ~~11.02.240~~~~220~~ 11.02.220 Shall.
- ~~11.02.220~~~~230~~ 11.02.230 Special provisions.
- ~~11.02.230~~~~240~~ 11.02.240 Stabilometer "R" value.
- ~~11.02.240~~~~250~~ 11.02.250 State.
- ~~11.02.250~~~~260~~ 11.02.260 State specifications.
- ~~11.02.260~~ 11.02.260 Through road.
- ~~11.02.270~~~~270~~ 11.02.270 Traffic index.
- ~~11.02.280~~~~280~~ 11.02.280 Traveled way.
- ~~11.02.290~~~~290~~ 11.02.290 Turnaround bulb.
- ~~11.02.300~~ 11.02.300 Turnaround, hHammerhead.
- ~~11.02.300~~~~310~~ 11.02.310 Turnout.
- ~~11.02.310~~ ~~320~~11.02.320 Urban development Uniform surface.
- ~~11.02.320~~~~330~~ 11.02.330 Urban development.
- ~~11.02.340~~ 11.02.340 Urban streets.

**11.02.010 Interpretation.** In this title or the state specifications, the intent and meaning of the terms that are used shall be as defined in Section I of the ~~s~~State ~~s~~Specifications except as specifically noted, revised or added in this title.

**11.02.020 \_Acceptance.** "Acceptance" ~~is~~ ~~means~~ the formal written acceptance by the Director of ~~Public Works~~ for work which is completed on roads which are to be included into the county-maintained road system.

**11.02.030 All weather surface.** "All weather surface" means a minimum of a four (4) inch thick layer of compacted Class II aggregate baserock meeting state specifications.

~~11.02.030 Arterial road.~~ ~~An "arterial road" is means a roadway which provides intercounty access between cities and large communities. In Tuolumne County, major and minor arterial roads are state highways and are designated in the regional transportation plan.~~

**11.02.040 \_California ~~e~~Culvert ~~P~~practice.** The "California ~~C~~culvert ~~P~~practice" ~~is~~ ~~means~~ ~~the~~ series of technical abstracts from the California Highways and Public Works, prevailing edition.

~~11.02.050 Collector road.~~ ~~A "collector road" means a roadway which provides a link between local roads and arterial roads. Both major and minor collectors are designated in the regional transportation plan.~~

**11.02.060~~50~~ Consulting engineer.** "Consulting engineer" means any person or persons, firm, partnership or corporation legally authorized to practice civil engineering in the ~~s~~State of California who prepares or submits improvement plans and specifications to the ~~e~~County of ~~Tuolumne~~ for approval.

**11.02.070~~60~~ Contractor.** "Contractor" means any person or persons, firm, partnership, corporation, or combination thereof, who have entered into a contract with any person, corporation, company, developer, special districts, the ~~C~~county of ~~Tuolumne~~, or his/her or their legal representative for the construction or improvement of any road.

**11.02.08070** County. "County" means the eCounty of Tuolumne.

**11.02.09080** County engineer. "County engineer" means a person legally authorized to practice civil engineering in the State of California who reports directly to the eCounty of Tuolumne public works director~~Director of Transportation~~, or his or her qualified designee.

**11.02.100** ~~Cul-de-sac road.~~ "Cul-de-sac road" means ~~any road or combination of roads which does not meet the definition of a through road. Such roads normally have special provisions for turning around at the terminus and serve abutting property.~~

**11.02.110090** Department. "Department" means the eCounty of Tuolumne ~~department of public works~~Roads Division.

**11.02.12000** Director. "Director" means the eCounty of Tuolumne ~~public works d~~irector of Transportation, or his or her qualified designee.

**11.02.13010** Driveway. ~~A~~ "Driveway" means a vehicular access that serves a single parcel, with not more than three (3) dwelling units, and any number of accessory buildings.

**11.02.120** Driveway, common. "Common driveway" means a vehicular access that serves up to Two Ssix (6) parcels may share a common driveway provided thatwith the common portion of the driveway is being a minimum of 18 feet in width and, and does not provide access to more than six (6) dwelling units and any number of accessory buildings, and for which easements have been established for use of the driveway by bothall parcels.

**11.02.14030** Final map. "Final map" means a map showing a subdivision for which a final map is required by Government Code sSection 66426.

**11.02.150** ~~Local road.~~ "Local road" means ~~a roadway primarily serving as direct access to abutting properties.~~

**11.02.160** ~~Major collectors.~~ "Major collectors," ~~as designated in the regional transportation plan, function as corridors between communities and other major traffic generators.~~

**11.02.17040** May. "May" is permissive.

**11.02.180** ~~Minor collector.~~ "Minor collectors," ~~as designated in the regional transportation plan, serve as links to major collector or arterial roads.~~

**11.02.19050** Parcel map. "Parcel map" means a map showing a land division for which a final map is not required by Government Code Ssection 66426.

**11.02.030160** ~~Arterial r~~Road, Arterial. An "arterialArterial road" is means a roadway which provides intercounty access between cities and large communities. In Tuolumne County major and minor arterial roads are ~~state highways and are~~ designated in the rRegional transportation plan.

**11.02.050170** ~~Collector r~~Road, Collector. A "collectorCollector road" means a roadway which provides a link between local roads and arterial roads. Both major and minor collectors are designated in the rRegional transportation plan.

**A. ~~11.02.160~~ Major collectors.** "Major collectors," as designated in the ~~r~~**R**egional ~~t~~**T**ransportation ~~p~~**P**lan, function as corridors between communities and other major traffic generators.

**B. ~~11.02.180~~ Minor collectors.** "Minor collectors," as designated in the ~~r~~**R**egional ~~t~~**T**ransportation ~~p~~**P**lan, serve as links to major collectors ~~s~~ or arterial roads.

**~~11.02.100~~180 Cul-de-sac ~~r~~Road, Cul-de-sac.** "Cul-de-sac road" means any road or combination of roads which does not meet the definition of a through road. Such roads normally have special provisions for turning around at the terminus and serve abutting property.

**~~11.02.150~~190 Local ~~r~~Road, Local.** "Local road" means a roadway primarily serving as direct access to abutting properties.

**~~11.02.200~~000 Off-site ~~r~~Road, Off-site.** "Off-site road" means the portion of a road between the boundaries of a land division or project site and a county-maintained road or state highway.

**~~11.02.260~~10 Through ~~r~~Road, Through.** "Through road" means any road classified as an arterial road, or a collector road, or any other public road or public road segment on which it is possible to enter at one end via any route from an arterial or collector road and to depart at the other end and reach an arterial or collector road without retracing any portion of the ingress route, with all portions of the ingress/egress route having unrestricted legal access and meeting the minimum design standards for roadways contained herein.

**~~11.02.240~~20 Shall.** "Shall" is mandatory.

**~~11.02.220~~30 Special provisions.** "Special provisions" means the use of specific clauses setting forth conditions or requirements peculiar to the work and supplementary to the ~~standard~~ state specifications.

**~~11.02.230~~40 Stabilometer "R" value.** "Stabilometer 'R' value" means a parameter representing the resistance to deformation of a saturated soil under compression at a given density. It is used in the design of flexible and rigid pavements.

**~~11.02.240~~50 State.** "State" as used in the state specifications, means Tuolumne County.

**~~11.02.250~~60 State specifications.** "State specifications" means the standard specifications of the ~~s~~**S**tate of California Department of ~~Transportation~~ Public Works, Division of Highways, prevailing edition.

~~**11.02.260 Through road.** "Through road" means an arterial road, a collector road, or any other public road or public road segment on which it is possible to enter at one end via any route from an arterial or collector road and to depart at the other end and reach an arterial or collector road without retracing any portion of the ingress route, with all portions of the ingress/egress route having unrestricted legal access and meeting the minimum design standards for roadways contained herein.~~

**~~11.02.270~~70 Traffic index.** ~~The~~ ~~"t~~**T**raffic index" ~~means~~ is a measure of the number of equivalent eighteen thousand (18,000) pounds single axle loads expected in the design lane over the design life period.

**~~11.02.280~~80 Traveled way.** "Traveled way" means the surfaced, driveable portion of the roadway, exclusive of shoulders and drainage facilities.

**11.02.290 Turnaround bulb.** "Turnaround bulb" means a section of roadway, circular in shape, provided for the purpose of reversing direction with one turning movement.

**11.02.300 Turnaround, hammerhead.** "Hammerhead turnaround" means a section of roadway provided for the purpose of reversing direction with no more than one backing movement.

**~~11.02.300~~10 Turnout.** "Turnout" means a short, additional travel lane area generally provided to allow passing on a narrow road.

**11.02.320 Uniform surface.** "Uniform surface" means the finished surface on a road is the same for its entire width. A uniform surface applies to the traveled way of a road and is required to have the same surface as the traveled way as provided in Section 11.12.010.

**~~11.02.310~~30 Urban development.** "Urban development" ~~means the development of parcels smaller than two acres in size~~ is as defined in the Tuolumne County General Plan.

**11.02.340 Urban streets.** "Urban streets," as designated in the Regional Transportation Plan and the Circulation Element of the Tuolumne County General Plan, means roadways which provide access for automotive vehicles as well as increased pedestrians and bicyclists to the urbanized areas of Tuolumne County.

## Chapter 11.12

### BASIC ROAD DESIGN AND CONSTRUCTION STANDARDS

#### Sections:

- 11.12.005 Alternate materials and methods.
- 11.12.007 Exceptions.
- 11.12.010 Geometrics and roadbed design.
- 11.12.020 Structural design standards.
- 11.12.030 Profiles.
- 11.12.040 Cul-de-sacs.
- 11.12.050 Street signing.
- 11.12.060 Driveways.
- 11.12.062 Gates on driveways.
- 11.12.063 Gates on roads.**
- 11.12.065 One-way roads.
- 11.12.067 Alleys.
- 11.12.070 Specifications for material and construction.

**11.12.005 Alternate materials and methods.** The provisions of these roadway standards are not intended to prevent the use of any material or method of construction not specifically prescribed within, provided any alternate is approved by the County Engineer with the concurrence of the Director.

The ~~director~~County Engineer may approve any such alternate, provided he/she finds that the proposed design is satisfactory and complies with the intent of these standards and that the materials, method or work offered is, for the purpose intended, at least the equivalent of that prescribed within

these standards in suitability, strength, effectiveness, durability and safety.

**11.12.007 Exceptions.** Except as otherwise provided herein, exceptions to specific provisions of the standards set forth in this Chapter may be granted by the County Engineer with the concurrence of the Director, provided that adequate justification that such exceptions provide the same overall practical effect is documented in writing prior to approval.

**11.12.010 Geometrics and roadbed design.** The following minimum standards of the geometrics and roadbed design for proposed improvements shall govern the preparation of plans and construction for such improvements

A. Width of Traveled Way and Shoulders. The minimum width of a traveled way and shoulders shall be as follows:

- ~~1. Major or minor collector: twenty four feet;~~
- ~~2. Local road: twenty feet;~~
- ~~3. One-way road: twelve feet;~~
- ~~4. Driveway: twelve feet.~~

B. Width of Shoulders. ~~Road shoulders shall be provided on each side of the road as indicated below:~~

- ~~1. Major collector roads: 8 feet with 6 feet paved;~~
- ~~2. Minor collector roads: 6 feet with 4 feet paved;~~
- ~~3. Local roads: No shoulder:\*~~
- ~~1 foot with 0 feet paved:\*\*~~
- ~~2 feet with 0 feet paved:\*\*\*~~
- ~~4 feet with 3 feet paved:\*\*\*\*~~
- ~~4. One-way: two feet with zero feet paved;~~
- ~~5. Driveway: none.~~

~~\* On parcel maps with parcels two acres or larger and for unpaved roads serving four parcels or less.~~

~~\*\* On parcel maps with paved roads and for paved roads serving four parcels or less.~~

~~\*\*\* Roads for final maps with parcels two acres or larger.~~

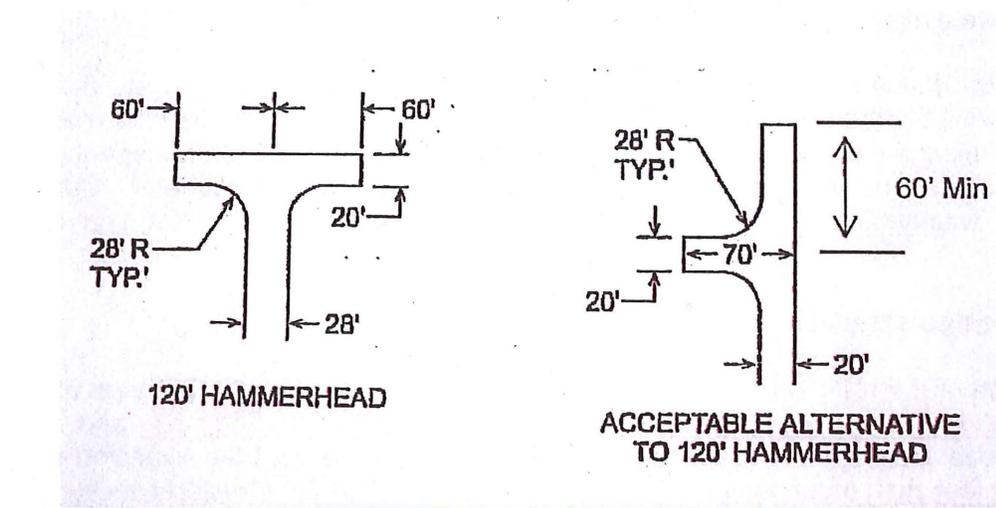
~~\*\*\*\* Urban development on final maps.~~

<u>Road Classification</u>	<u>Traveled Way</u>	<u>Width of Shoulders</u>
<u>Arterial</u>	<u>24 feet to 60 feet</u>	<u>varies 4 feet to 8 feet</u>
<u>Major Collector</u>	<u>24 feet</u>	<u>8 feet with 6 feet paved</u>
<u>Minor Collector</u>	<u>24 feet</u>	<u>6 feet with 4 feet paved</u>
<u>Local Road</u>	<u>20 feet</u>	<u>No shoulder required for parcel maps with parcels two acres or larger and for unpaved roads serving four parcels or less</u>
		<u>1 foot with 0 feet paved for parcel maps with paved roads and for paved roads serving four parcels or less</u>
		<u>2 feet with 0 feet paved for final maps with parcels two acres or larger</u>
		<u>4 feet with 3 feet paved for urban development on final maps</u>
<u>One-way Road</u>	<u>12 feet</u>	<u>2 feet with 0 feet paved</u>
<u>Driveway</u>	<u>12 feet</u>	<u>No shoulder required</u>
<u>Common Driveway</u>	<u>18 feet</u>	<u>1 foot dirt shoulder</u>

~~CB.~~ Turnouts and Turning Bulbs. Turnouts shall be a minimum of ten (10) feet in width and a minimum of thirty (30) feet in length with a minimum twenty-five (25) foot taper at each end, and shall ~~be surfaced in the same manner as~~ have a uniform surface with the adjacent road.

C. Turning Bulbs. Turning bulbs shall have a minimum radius of forty (40) feet and shall ~~be surfaced in the same manner as~~ have a uniform surface with the remainder of the road.

D. Hammerhead Turnarounds. ~~Hammerhead turnarounds may be used. , provided no more than ten (10) dwelling units are served by the cul-de-sac road that terminates in the hammerhead, the length of the cul-de-sac road does not exceed 1320 feet, t~~ The slope of the turnaround shall not exceed 6%, and the turnaround shall have a uniform surface conforming with the remainder of the road. Typical layouts of hammerhead turnarounds are illustrated below:



~~DE.~~ Curve Widening. Curve widening shall be added to the required shoulder width on curves having a radius less than two-hundred (200) feet. The widening shall be at least equal to four-hundred (400) divided by the radius of the curve. The widened area ~~shall be surfaced in the same manner as~~ shall have a uniform surface with the adjacent road.

~~EF.~~ Percent of Crown. The minimum percent of crown for all class roads shall be two percent (2%).

~~FG.~~ Superelevation Rate. The minimum superelevation rate for all class roads shall be 0.02 foot per one foot. The maximum superelevation rate shall not exceed 0.06 foot per one foot.

~~GH.~~ Side Slope Ratio. The side slope (fill) for all ~~class roads~~ classifications shall be no steeper than 2:1.

~~HI.~~ Back Slope Ratio. The back slope (cut) ratio for all ~~class roads~~ classifications shall be no steeper than 1 1/2:1. A designed back slope ratio may be modified with the approval of the ~~e~~ County ~~e~~ Engineer depending upon the materials encountered. The modified back slope shall not be steeper than 1/2:1.

~~IJ.~~ Side Slope Ratio-Ditch. The side slope ratio for all roadside ditches shall not be steeper than 3:1 for unpaved ditches, and 6:1 for paved ditches with dikes.

**JK.** Ditch Depth. Unpaved ditches shall be no more than one (1) foot deep with the inclusion of appropriate bed material and paved ditches with dikes shall be no less than four (4) inches deep.

**KL.** Stopping Sight Distance. The stopping sight distance shall be based upon the posted speed limit or the minimum design speed, whichever is greater. The minimum design speed shall be thirty-five (35) miles per hour (mph) for arterial and collector roads and twenty-five (25) mph for all other roads.

**LM.** Alignments. Alignment for horizontal curves shall be based upon the posted speed limit or minimum design speed, whichever is greater, and shall be no smaller than a fifty (50) foot interior curve radius with a minimum taper length of fifty (50) feet. Vertical curves shall provide for a sight distance consistent with the posted speed limit or the minimum design speed, whichever is greater, and shall have a minimum length of one hundred (100) feet.

**MN.** Drainage. Roadside drainage facilities shall be located outside of the traveled way. Culverts and/or down drains shall be three-hundred (300) feet apart or as necessary to protect the roadway unless satisfactory drainage calculations are submitted to demonstrate roadside drainage may be carried further. Cross-culverts shall be no less than eighteen (18) inches in diameter. Culverts with a diameter of twenty-four (24) inches or more shall have appropriate inlet and outlet protection.

**11.12.020 Structural design standards.**

A. The structural section of the road surface shall be designed based on a twenty (20) year design life, or a thirty (30) year design life subject to approval by the County Engineer, and using stabilometer "R" values, ~~which are not less than those indicated below,~~ and the expected traffic index, which are not less than those indicated below. In no event shall the structural section of a road include less than the following compacted depths of asphalt concrete and aggregate base:

<u>Road Designation</u>	<u>Asphalt Concrete</u>	<u>Aggregate Base</u>	<u>T.I.</u>
Major arterial	<del>**** 6"</del>	<del>**** 12"</del>	<del>10</del>
Minor arterial	<del>**** 6"</del>	<del>**** 12"</del>	<del>10</del>
Major collector	<del>34 1/2"</del>	<del>8 10"</del>	<del>8.5</del>
Minor collector	<del>23 1/2"</del>	<del>6 8"</del>	<del>6.5</del>
Local road	<del>2***</del>	<del>4 6"</del>	<del>5</del>
Driveway	<del>*** 4"</del>	<del>n/a*</del>	

\* Structural design is not required.

\*\* Not required for final maps with minimum parcel size of five or more acres, or for parcel maps with minimum parcel size of two or more acres.

\*\*\* As required by Section 11.12.060.

\*\*\*\* Structural section shall be based on criteria developed for the specific project.

<u>Road Classification</u>	<u>Asphalt Concrete</u>	<u>Aggregate Base</u>	<u>Traffic Index (T.I.)</u>
<u>Arterial**</u>	<u>6"</u>	<u>12"</u>	<u>10</u>
<u>Major Collector</u>	<u>4 1/2"</u>	<u>10"</u>	<u>8.5</u>
<u>Minor Collector</u>	<u>3 1/2"</u>	<u>8"</u>	<u>6.5</u>
<u>Local Road</u>	<u>2"*</u>	<u>6"</u>	<u>5</u>
<u>One-way Road</u>	<u>2"*</u>	<u>6"</u>	<u>5</u>
<u>Driveway</u>	<u>Refer to Section 11.12.060</u>	<u>4"</u>	<u>N/A</u>
<u>Common Driveway</u>	<u>Refer to Section 11.12.060</u>	<u>4"</u>	<u>N/A</u>

\* An asphalt concrete surface is not required for final maps with minimum parcel size of five (5) acres, or for parcel maps with minimum parcel size of two (2) acres.

\*\* The structural section shall be based on criteria developed for the specific project.

B. All road structures shall be capable of supporting a 40,000 pound axle load and shall be constructed to carry at least the maximum load and provide the minimum vertical clearance as required by Vehicle Code Sections 35550, 35750 and 35250.

**11.12.030 Profiles.** The minimum and maximum gradients for all class roads shall be as follows:

- A. The minimum gradient shall be one percent (1%);
- B. The maximum gradient for local roads below the three thousand foot elevation shall be sixteen percent (16%);
- C. The maximum gradient for local roads above the three thousand foot elevation shall be twelve percent (12%);

D. The maximum slope for a turnaround shall not exceed six percent (6%);

DE. The maximum gradient for arterial and collector roads shall be as shown below:

**Design Speed (mph)**

Type of Terrain	20	30	40	50	60	70
Level	7	7	7	6	5	4
Rolling	10	9	8	7	6	5
Mountainous	12	10	10	9	8	6

Type of Terrain	Design Speed in Miles Per Hour (mph)					
	20	30	40	50	60	70
Level	<u>7%</u>	<u>7%</u>	<u>7%</u>	<u>6%</u>	<u>5%</u>	<u>4%</u>
Rolling	<u>10%</u>	<u>9%</u>	<u>8%</u>	<u>7%</u>	<u>6%</u>	<u>5%</u>
Mountainous	<u>12%</u>	<u>10%</u>	<u>10%</u>	<u>9%</u>	<u>8%</u>	<u>6%</u>

**11.12.040 Cul-de-sacs.**

- A. A cul-de-sac road shall be posted "Not a Through Road" and shall terminate in a turnaround bulb or hammerhead turnaround.
- B. The maximum length of a cul-de-sac road, including all cul-de-sac roads accessed from the cul-de-sac, shall not exceed the following cumulative lengths regardless of the number of parcels served:

- Parcels zoned for less than one acre – 800 feet
- Parcels zoned for 1 acre to 4.99 acres - 1320 feet
- Parcels zoned for 5 acres to 19.99 acres\* - 2640 feet
- Parcels zoned for 20 acres or larger\* - 5280 feet

\* Where parcels are zoned five acres or larger, turnaround bulbs shall be provided at intervals of a maximum of one thousand three hundred twenty (1,320) feet.

All lengths shall be measured from the edge of the roadway surface at its intersection with a through road to the end of the road surface at its farthest point. ~~Where a cul-de-sac crosses areas of differing zoned parcel sizes, requiring different length limits, the shortest allowable length shall apply~~ a cul-de-sac turnaround bulb shall be required at each of the cumulative limits listed above for every zoning district it passes through.

- C. Exceptions to the standards for cul-de-sac roads for a tentative map as defined in Section 16.04.530 of this code shall only be granted when the ~~e~~D Director has concurrence from the Tuolumne County Fire Prevention Division and only when all of the following circumstances apply:
1. Measures have been incorporated into the approval of the tentative map to reduce fire hazard in a manner that have the same practical effect as limiting the length of a cul-de-sac road.
  2. The allowed increase in length does not exceed 10% of the allowed length prescribed in section "B" above.
  3. This exception would only apply to parcels zoned RE-5, RE-10, A, and AE that are 5 gross acres or larger.

**11.12.050 Street signing.** All streets shall be identified and signed at intersections to allow for speedy response of emergency equipment. Size of letters, numbers and symbols for street and road signs shall be a minimum three (3) inch letter height, three-eighth (3/8) inch stroke, reflectorized, contrasting with the background color of the sign. Signs shall be installed indicating special roadway conditions, including weight limits, width and vertical clearance restrictions and one-way traffic.

**11.12.060 Driveways.**

- A. Driveways shall provide a minimum twelve (12) foot traffic lane with an all weather surface, have fifteen (15) feet of unobstructed vertical clearance with a maximum grade of sixteen percent (16%). Turnouts shall be provided at midpoint for driveways between one hundred fifty (150) feet and eight hundred (800) feet in length and at four hundred (400) foot intervals for driveways over eight hundred (800) feet in length. Turnouts are not required on common driveways which are required to have a minimum eighteen (18) foot wide traffic lane.
- B. Where residential dwellings are less than one hundred fifty (150) feet from the roadway, the driveway grade may exceed sixteen percent (16%) to a maximum twenty-two percent (22%), but the driveway shall be paved with asphalt concrete or concrete. In addition, a parking bay at least ten (10) feet wide and forty (40) feet long ~~and surfaced in the same manner as~~ with a uniform surface with the adjacent road shall be provided at road grade.
- C. A turnaround bulb or hammerhead turnaround shall be provided within fifty (50) feet of all building sites on driveways over three hundred (300) feet in length.
- D. Exceptions to the driveway standards provided herein may only be granted by the Tuolumne County Fire Prevention Division in accordance with Section 15.20.050 of this code.

**11.12.062 Gates on driveways. Gates may be installed on driveways provided they comply with**

the following standards:

- A. Each gate entrance shall be at least two (2) feet wider than the width of the traveled way serving the gate.
- B. All gates providing access from a road to a driveway shall be located at least thirty (30) feet from the roadway edge and shall open away from the roadway.
- ~~C. Where a one-way road with a single traffic lane provides access to a gated entrance, a turning radius of at least forty feet shall be used for the turn into the gateway.~~

**11.12.063 Gates on roads.** The installation of a gate across a public road shall be prohibited. Gates may be installed on private roads that are not dedicated for public use and are limited to the use of the owner or group of owners who are responsible for maintaining the road, provided they comply with the following requirements:

- A. The installation of a gate across a fire apparatus access road shall be approved by the Tuolumne County Fire Prevention Division.
- B. Keys, codes, or other means of access through the gate shall be provided to all emergency response agencies.
- C. Where electric gates are installed, they shall have an approved means of emergency operation. The electric gates and the emergency operation shall be maintained operational at all times. Electric gate operators, where provided, shall be listed in accordance with UL 325. Gates intended for automatic operation shall be designed, constructed and installed to comply with the requirements of ASTM F 2200.
- D. Where a road is proposed to be gated, a turnaround bulb or a hammerhead turnaround shall be constructed between the gate and the adjacent intersecting road for the purpose of allowing vehicles to safely reverse direction in front of the gate without backing onto the adjacent un-gated road.

**11.12.065. One-way roads.** All one-way roads shall be constructed to provide a minimum of one twelve (12) foot wide traffic lane. All one-way roads shall connect to a two lane roadway at both ends, and shall provide access to an area currently zoned for no more than a total of ten (10) dwelling units, including both primary and secondary units. No such road shall exceed two thousand six hundred forty (2,640) feet in length. Turnouts shall be constructed as follows:

- A. For one-way roads which exceed 300 feet but are less than 800 feet in length, a turnout shall be provided at approximately the mid point of the one-way road.
- B. For one-way roads which equal or exceed 800 feet in length, turnouts shall be provided at four hundred foot intervals along the one-way road.

**11.12.067 Alleys.** Alleys, as defined in Section 17.04.070 of this code as "improved pedestrian alleyways" may be used for non-vehicular access and as "improved vehicular alleyways" may be used for vehicular access, provided they comply with the standards established in the Tuolumne Parking & Alleyway Study dated October 15, 2010, as it may be amended by the Board of Supervisors.

### 11.12.070 Specifications for material and construction.

- A. Conformance with Specifications. All materials furnished and the methods of performing any proposed work shall conform to and be done in accordance with the applicable portions of the standard specifications and this title.
- B. Cessation of Construction Due to Weather Conditions. General climate and ground moisture conditions will determine the cessation of construction. The ~~director~~County Engineer may notify contractors and engineers to cease construction when, in his/her opinion, conditions are such that improvements cannot be constructed to the requirements of the standards specifications or this title. Written notification by the ~~director~~County Engineer will be given on an individual basis as to when work may be initiated at the beginning of the construction season.
- C. Temporary Improvements. The installation of temporary improvements for winter cessation in order to make building sites accessible will be approved on an individual basis, provided that it is expressly understood that such improvements are of only a temporary nature and that they will be removed and replaced with permanent type improvements according to the approved plans and specifications and as may be indicated by the ~~director~~County Engineer. Plastic or pliable synthetic pipe may be installed within the roadway template for water main and sewer main purposes.

**EXCERPT FROM  
BOARD OF SUPERVISORS  
TRANSPORTATION COMMITTEE  
MINUTES**

**October 28, 2013**

**PRESENT:** Supervisor John Gray and Supervisor Evan Royce

**ABSENT:** None

**STAFF:** Bev Shane, Community Resources Director, Duke York, Deputy CRA Director - Roads, Maureen Frank, Deputy County Administrator, Tanya Allen, Supervising Engineer, and Christine Mongsene, Assistant to Department Head

**Ordinance amending Chapter 11 of the Tuolumne County Ordinance Code to add and clarify definitions and modify the basic road design and construction standards to provide more flexibility for development projects to comply with the fire safety regulations of Public Resources Code Section 4290.**

Mr. York explained that the proposed amendments to Chapter 11 were intended, in part, to modify the County's road design and construction standards in order to comply with the fire safety regulations contained in Public Resources Code Section 4290, which was developed and adopted by the State Legislature following the devastating Oakland Hills Fire of 1991. He discussed the need for consistency when considering individual design standards in order to identify, eliminate, and mitigate potential fire hazards and noted that the proposed modifications were extensive and were the result of numerous meetings that had been held between staff, CalFire, Tuolumne County Fire, and the Board of Forestry.

Mr. York stated that, following the meetings with the fire agencies, staff members then met with members of the local development community to discuss proposed modifications to Title 11, which included the addition of numerous definitions, including those for "all weather surface," "hammerhead turnaround," and "urban streets." He commented that the addition of a definition for "driveway, common" would be extremely beneficial to the development community because it would allow a single driveway to serve six parcels, instead of the two currently allowed, and a maximum of six residences and any number of accessory buildings.

Mr. York then discussed the addition of definitions for "hammerhead-type" turnarounds, which would be ideal for the County's uneven terrain, and for "uniform surface" and "urban development," which was prompted by the Tuolumne County Transportation Council's work on the Blueprint project. He then discussed the addition of Section 11.12.063, Gates on Roads, which required that a turnaround bulb or a hammerhead turnaround be located between the gate and the through road.

Mr. York stated that the change that would likely impact the development community the most was the one proposed to be made to Section 11.12.040, Cul-de-sacs, with regard to length limits. He explained that the amendment would require turnaround bulbs at 800 foot intervals for parcels zoned for less than one acre, at 1,320 foot intervals for parcels zoned for 1 to 4.99 acres, at 2,640 foot intervals for parcels zoned for 5 to 19.99 acres, and at 5,280 foot intervals for parcels zoned for 20 acres or larger on cul-de-sacs that cross areas of differing zoned parcel sizes. He remarked that the modification would allow for "serial development" and said that

Apple Colony Road was an example of a road that would be affected by the change. He then stated that the proposed changes to Title 11 would have to be considered by the Board of Forestry following the Board of Supervisors decision on the matter.

Supervisor Royce declared "this is a big deal!"

Supervisor Gray agreed that the proposed changes were appropriate and much needed.

Supervisor Royce and Mr. York discussed Section 11.12.067, Alleys, which provides for both pedestrian walkways and vehicular access.

It was moved by Supervisor Royce and seconded by Supervisor Gray to endorse the proposed amendments to Title 11.

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ORDINANCE 3239

AN ORDINANCE REPLACING CHAPTERS 11.02 and 11.12 OF THE TUOLUMNE COUNTY ORDINANCE CODE WITH NEW CHAPTERS 11.02 AND 11.12 TO ADD AND CLARIFY DEFINITIONS AND MODIFY THE BASIC ROAD DESIGN AND CONSTRUCTION STANDARDS TO PROVIDE MORE FLEXIBILITY FOR DEVELOPMENT PROJECTS TO COMPLY WITH THE FIRE SAFETY REGULATIONS OF PUBLIC RESOURCES CODE SECTION 4290

- ooOoo -

The Board of Supervisors of the County of Tuolumne ordains as follows:

SECTION 1: Chapter 11.02 of the Tuolumne County Ordinance Code is hereby repealed and replaced with a new Chapter 11.02 to read as follows:

**Chapter 11.02  
DEFINITIONS**

**Sections:**

- 11.02.010 Interpretation.
- 11.02.020 Acceptance.
- 11.02.030 All weather surface.
- 11.02.040 California Culvert Practice.
- 11.02.050 Consulting engineer.
- 11.02.060 Contractor.
- 11.02.070 County.
- 11.02.080 County engineer.
- 11.02.090 Department.
- 11.02.100 Director.
- 11.02.110 Driveway.
- 11.02.120 Driveway, common.
- 11.02.130 Final map.
- 11.02.140 May.
- 11.02.150 Parcel map.
- 11.02.160 Road, Arterial.
- 11.02.170 Road, Collector.
- 11.02.180 Road, Cul-de-sac.
- 11.02.190 Road, Local.
- 11.02.200 Road, Through.
- 11.02.210 Road, Off-site.
- 11.02.220 Shall.
- 11.02.230 Special provisions.
- 11.02.240 Stabilometer "R" value.
- 11.02.250 State.
- 11.02.260 State specifications.
- 11.02.270 Traffic index.
- 11.02.280 Traveled way.

- 11.02.290 Turnaround bulb.
- 11.02.300 Turnaround, hammerhead.
- 11.02.310 Turnout.
- 11.02.320 Uniform surface.
- 11.02.330 Urban development.
- 11.02.340 Urban streets.

**11.02.010 Interpretation.** In this title or the state specifications, the intent and meaning of the terms that are used shall be as defined in Section I of the state specifications except as specifically noted, revised or added in this title.

**11.02.020 Acceptance.** "Acceptance" means the formal written acceptance by the Director for work which is completed on roads which are to be included into the county-maintained road system.

**11.02.030 All weather surface.** "All weather surface" means a minimum of a four (4) inch thick layer of compacted Class II aggregate baserock meeting state specifications.

**11.02.040 California Culvert Practice.** The "California Culvert Practice" means the series of technical abstracts from the California Highways and Public Works, prevailing edition.

**11.02.050 Consulting engineer.** "Consulting engineer" means any person or persons, firm, partnership or corporation legally authorized to practice civil engineering in the State of California who prepares or submits improvement plans and specifications to the County for approval.

**11.02.060 Contractor.** "Contractor" means any person or persons, firm, partnership, corporation, or combination thereof, who have entered into a contract with any person, corporation, company, developer, special districts, the County, or his/her or their legal representative for the construction or improvement of any road.

**11.02.070 County.** "County" means the County of Tuolumne.

**11.02.080 County engineer.** "County engineer" means a person legally authorized to practice civil engineering in the State of California who reports directly to the Director, or his or her qualified designee.

**11.02.090 Department.** "Department" means the County of Tuolumne Roads Division.

**11.02.100 Director.** "Director" means the County of Tuolumne Director of Transportation, or his or her qualified designee.

**11.02.110 Driveway.** "Driveway" means a vehicular access that serves a single parcel, with not more than three (3) dwelling units, and any number of accessory buildings.

**11.02.120 Driveway, common.** "Common driveway" means a vehicular access that serves up to six (6) parcels with the common portion of the driveway being a minimum of 18 feet in width and does not provide access to more than six (6) dwelling units and any number of accessory buildings, and for which easements have been established for use of the driveway by all parcels.

**11.02.130 Final map.** "Final map" means a map showing a subdivision for which a final map is required by Government Code section 66426.

11.02.140 **May.** "May" is permissive.

11.02.150 **Parcel map.** "Parcel map" means a map showing a land division for which a final map is not required by Government Code section 66426.

11.02.160 **Road, Arterial.** "Arterial road" means a roadway which provides intercounty access between cities and large communities. In Tuolumne County major and minor arterial roads are designated in the Regional Transportation Plan.

11.02.170 **Road, Collector.** "Collector road" means a roadway which provides a link between local roads and arterial roads. Both major and minor collectors are designated in the Regional Transportation Plan.

A. Major collectors. "Major collectors," function as corridors between communities and other major traffic generators.

B. Minor collectors. "Minor collectors," serve as links to major collectors or arterial roads.

11.02.180 **Road, Cul-de-sac.** "Cul-de-sac road" means any road or combination of roads which does not meet the definition of a through road. Such roads normally have special provisions for turning around at the terminus and serve abutting property.

11.02.190 **Road, Local.** "Local road" means a roadway primarily serving as direct access to abutting properties.

11.02.200 **Road, Off-site.** "Off-site road" means the portion of a road between the boundaries of a land division or project site and a county-maintained road or state highway.

11.02.210 **Road, Through.** "Through road" means any road classified as an arterial or a collector, or any other public road or public road segment on which it is possible to enter at one end via any route from an arterial or collector road and to depart at the other end and reach an arterial or collector road without retracing any portion of the ingress route, with all portions of the ingress/egress route meeting the minimum design standards for roadways contained herein.

11.02.220 **Shall.** "Shall" is mandatory.

11.02.230 **Special provisions.** "Special provisions" means the use of specific clauses setting forth conditions or requirements peculiar to the work and supplementary to the state specifications.

11.02.240 **Stabilometer "R" value.** "Stabilometer 'R' value" means a parameter representing the resistance to deformation of a saturated soil under compression at a given density. It is used in the design of flexible and rigid pavements.

11.02.250 **State.** "State" as used in the state specifications, means Tuolumne County.

11.02.260 **State specifications.** "State specifications" means the standard specifications of the State of California Department of Transportation, prevailing edition.

11.02.270 **Traffic index.** "Traffic index" means a measure of the number of equivalent eighteen thousand (18,000) pounds single axle loads expected in the design lane over the design life period.

**11.02.280 Traveled way.** "Traveled way" means the surfaced, driveable portion of the roadway, exclusive of shoulders and drainage facilities.

**11.02.290 Turnaround bulb.** "Turnaround bulb" means a section of roadway, circular in shape, provided for the purpose of reversing direction with one turning movement.

**11.02.300 Turnaround, hammerhead.** "Hammerhead turnaround" means a section of roadway provided for the purpose of reversing direction with no more than one backing movement.

**11.02.310 Turnout.** "Turnout" means a short, additional travel lane area generally provided to allow passing on a narrow road.

**11.02.320 Uniform surface.** "Uniform surface" means the finished surface on a road is the same for its entire width. A uniform surface applies to the traveled way of a road and is required to have the same surface as the traveled way as provided in Section 11.12.010.

**11.02.330 Urban development.** "Urban development" is as defined in the Tuolumne County General Plan.

**11.02.340 Urban streets.** "Urban streets," as designated in the Regional Transportation Plan and the Circulation Element of the Tuolumne County General Plan, means roadways which provide access for automotive vehicles as well as increased pedestrians and bicyclists to the urbanized areas of Tuolumne County.

**SECTION 2:** Chapter 11.12 of the Tuolumne County Ordinance Code is hereby repealed and replaced with a new Chapter 11.12 to read as follows:

## Chapter 11.12

### BASIC ROAD DESIGN AND CONSTRUCTION STANDARDS

#### Sections:

- 11.12.005 Alternate materials and methods.**
- 11.12.007 Exceptions.**
- 11.12.010 Geometrics and roadbed design.**
- 11.12.020 Structural design standards.**
- 11.12.030 Profiles.**
- 11.12.040 Cul-de-sacs.**
- 11.12.050 Street signing.**
- 11.12.060 Driveways.**
- 11.12.062 Gates on driveways.**
- 11.12.063 Gates on roads.**
- 11.12.065 One-way roads.**
- 11.12.067 Alleys.**
- 11.12.070 Specifications for material and construction.**

**11.12.005 Alternate materials and methods.** The provisions of these roadway standards are not intended to prevent the use of any material or method of construction not specifically prescribed within, provided any alternate is approved by the County Engineer with the concurrence of the Director.

The County Engineer may approve any such alternate, provided he/she finds that the proposed design is satisfactory and complies with the intent of these standards and that the materials, method or work offered is, for the purpose intended, at least the equivalent of that prescribed within these standards in suitability, strength, effectiveness, durability and safety.

**11.12.007 Exceptions.** Except as otherwise provided herein, exceptions to specific provisions of the standards set forth in this Chapter may be granted by the County Engineer with the concurrence of the Director, provided that adequate justification that such exceptions provide the same overall practical effect is documented in writing prior to approval.

**11.12.010 Geometrics and roadbed design.** The following minimum standards of the geometrics and roadbed design for proposed improvements shall govern the preparation of plans and construction for such improvements

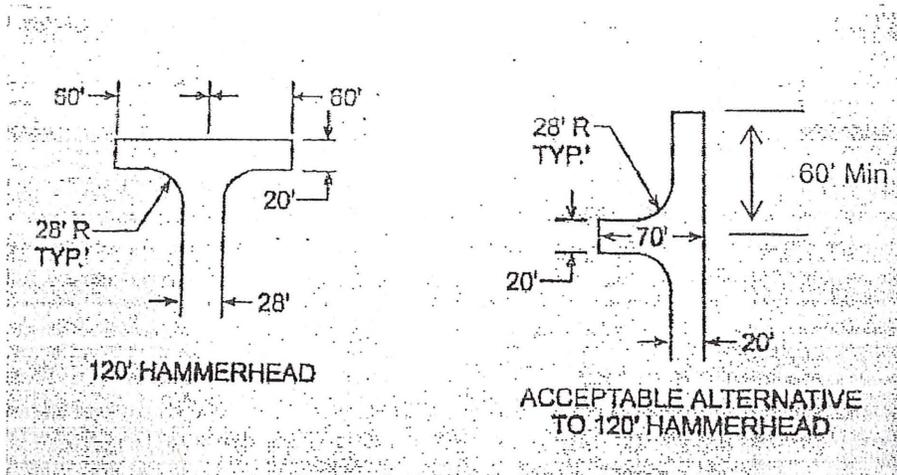
A. Width of Traveled Way and Shoulders. The minimum width of a traveled way and shoulders shall be as follows:

Road Classification	Traveled Way	Width of Shoulders
Arterial	24 feet to 60 feet	varies 4 feet to 8 feet
Major Collector	24 feet	8 feet with 6 feet paved
Minor Collector	24 feet	6 feet with 4 feet paved
Local Road	20 feet	No shoulder required for parcel maps with parcels two acres or larger and for unpaved roads serving four parcels or less
		1 foot with 0 feet paved for parcel maps with paved roads and for paved roads serving four parcels or less
		2 feet with 0 feet paved for final maps with parcels two acres or larger
		4 feet with 3 feet paved for urban development on final maps
One-way Road	12 feet	2 feet with 0 feet paved
Driveway	12 feet	No shoulder required
Common Driveway	18 feet	1 foot dirt shoulder

B. Turnouts. Turnouts shall be a minimum of ten (10) feet in width and a minimum of thirty (30) feet in length with a minimum twenty-five (25) foot taper at each end, and shall have a uniform surface with the adjacent road.

C. Turning Bulbs. Turning bulbs shall have a minimum radius of forty (40) feet and shall have a uniform surface with the remainder of the road.

D. Hammerhead Turnarounds. Hammerhead turnarounds may be used. The slope of the turnaround shall not exceed 6%, and the turnaround shall have a uniform surface conforming with the remainder of the road. Typical layouts of hammerhead turnarounds are illustrated below:



- E. Curve Widening. Curve widening shall be added to the required shoulder width on curves having a radius less than two-hundred (200) feet. The widening shall be at least equal to four-hundred (400) divided by the radius of the curve. The widened area shall have a uniform surface with the adjacent road.
- F. Percent of Crown. The minimum percent of crown for all class roads shall be two percent (2%).
- G. Superelevation Rate. The minimum superelevation rate for all class roads shall be 0.02 foot per one foot. The maximum superelevation rate shall not exceed 0.06 foot per one foot.
- H Side Slope Ratio. The side slope (fill) for all road classifications shall be no steeper than 2:1.
- I. Back Slope Ratio. The back slope (cut) ratio for all road classifications shall be no steeper than 1 1/2:1. A designed back slope ratio may be modified with the approval of the County Engineer depending upon the materials encountered. The modified back slope shall not be steeper than 1/2:1.
- J. Side Slope Ratio-Ditch. The side slope ratio for all roadside ditches shall not be steeper than 3:1 for unpaved ditches, and 6:1 for paved ditches with dikes.
- K. Ditch Depth. Unpaved ditches shall be no more than one (1) foot deep with the inclusion of appropriate bed material and paved ditches with dikes shall be no less than four (4) inches deep.
- L. Stopping Sight Distance. The stopping sight distance shall be based upon the posted speed limit or the minimum design speed, whichever is greater. The minimum design speed shall be thirty-five (35) miles per hour (mph) for arterial and collector roads and twenty-five (25) mph for all other roads.
- M. Alignments. Alignment for horizontal curves shall be based upon the posted speed limit or minimum design speed, whichever is greater, and shall be no smaller than a fifty (50) foot interior curve radius with a minimum taper length of fifty (50) feet. Vertical curves shall provide for a sight distance consistent with the posted speed limit or the minimum design speed, whichever is greater, and shall have a minimum length of one hundred (100) feet.

N. Drainage. Roadside drainage facilities shall be located outside of the traveled way. Culverts and/or down drains shall be three-hundred (300) feet apart or as necessary to protect the roadway unless satisfactory drainage calculations are submitted to demonstrate roadside drainage may be carried further. Cross-culverts shall be no less than eighteen (18) inches in diameter. Culverts with a diameter of twenty-four (24) inches or more shall have appropriate inlet and outlet protection.

**11.12.020 Structural design standards.**

A. The structural section of the road surface shall be designed based on a twenty (20) year design life, or a thirty (30) year design life subject to approval by the County Engineer, and using stabilometer "R" values, and the expected traffic index, which are not less than those indicated below. In no event shall the structural section of a road include less than the following compacted depths of asphalt concrete and aggregate base:

Road Classification	Asphalt Concrete	Aggregate Base	Traffic Index (T.I.)
Arterial**	6"	12"	10
Major Collector	4½"	10"	8.5
Minor Collector	3½"	8"	6.5
Local Road	2"*	6"	5
One-way Road	2"*	6"	5
Driveway	Refer to Section 11.12.060	4"	N/A
Common Driveway	Refer to Section 11.12.060	4"	N/A

\* An asphalt concrete surface is not required for final maps with minimum parcel size of five (5) acres, or for parcel maps with minimum parcel size of two (2) acres.

\*\* The structural section shall be based on criteria developed for the specific project.

B. All road structures shall be capable of supporting a 40,000 pound axle load and shall be constructed to carry at least the maximum load and provide the minimum vertical clearance as required by Vehicle Code sections 35550, 35750 and 35250.

**11.12.030 Profiles.** The minimum and maximum gradients for all class roads shall be as follows:

- A. The minimum gradient shall be one percent (1%);
- B. The maximum gradient for local roads below the three thousand foot elevation shall be sixteen percent (16%);
- C. The maximum gradient for local roads above the three thousand foot elevation shall be twelve percent (12%);
- D. The maximum slope for a turnaround shall not exceed six percent (6%);
- E. The maximum gradient for arterial and collector roads shall be as shown below:

Type of Terrain	Design Speed in Miles Per Hour (mph)					
	20	30	40	50	60	70
Level	7%	7%	7%	6%	5%	4%
Rolling	10%	9%	8%	7%	6%	5%
Mountainous	12%	10%	10%	9%	8%	6%

**11.12.040 Cul-de-sacs.**

- A. A cul-de-sac road shall be posted "Not a Through Road" and shall terminate in a turnaround bulb or hammerhead turnaround.
- B. The maximum length of a cul-de-sac road, including all cul-de-sac roads accessed from the cul-de-sac, shall not exceed the following cumulative lengths regardless of the number of parcels served:

- Parcels zoned for less than one acre – 800 feet
- Parcels zoned for 1 acre to 4.99 acres - 1320 feet
- Parcels zoned for 5 acres to 19.99 acres\* - 2640 feet
- Parcels zoned for 20 acres or larger\* - 5280 feet

\* Where parcels are zoned five acres or larger, turnaround bulbs shall be provided at intervals of a maximum of one thousand three hundred twenty (1,320) feet.

All lengths shall be measured from the edge of the roadway surface at its intersection with a through road to the end of the road surface at its farthest point. Where a cul-de-sac crosses areas of differing zoned parcel sizes, requiring different length limits, a turnaround bulb shall be required at each of the cumulative limits listed above for every zoning district it passes through.

- C. Exceptions to the standards for cul-de-sac roads for a tentative map as defined in Section 16.04.530 of this code shall only be granted when the Director has concurrence from the Tuolumne County Fire Prevention Division and only when all of the following circumstances apply:
  - 1. Measures have been incorporated into the approval of the tentative map to reduce fire hazard in a manner that have the same practical effect as limiting the length of a cul-de-sac road.
  - 2. The allowed increase in length does not exceed 10% of the allowed length prescribed in section "B" above.
  - 3. This exception would only apply to parcels zoned RE-5, RE-10, A, and AE that are 5 gross acres or larger.

**11.12.050 Street signing.** All streets shall be identified and signed at intersections to allow for speedy response of emergency equipment. Size of letters, numbers and symbols for street and road signs shall be a minimum three (3) inch letter height, three-eighth (3/8) inch stroke, reflectorized, contrasting with the background color of the sign. Signs shall be installed indicating special roadway conditions, including weight limits, width and vertical clearance restrictions and one-way traffic.

**11.12.060 Driveways.**

- A. Driveways shall provide a minimum twelve (12) foot traffic lane with an all weather surface, have fifteen (15) feet of unobstructed vertical clearance with a maximum grade of sixteen percent (16%). Turnouts shall be provided at midpoint for driveways between one hundred fifty (150) feet and eight hundred (800) feet in length and at four hundred (400) foot intervals for driveways over eight hundred (800) feet in length. Turnouts are not required on common driveways which are required to have a minimum eighteen (18) foot wide traffic lane.

- B. Where residential dwellings are less than one hundred fifty (150) feet from the roadway, the driveway grade may exceed sixteen percent (16%) to a maximum twenty-two percent (22%), but the driveway shall be paved with asphalt concrete or concrete. In addition, a parking bay at least ten (10) feet wide and forty (40) feet long with a uniform surface with the adjacent road shall be provided at road grade.
- C. A turnaround bulb or hammerhead turnaround shall be provided within fifty (50) feet of all building sites on driveways over three hundred (300) feet in length.
- D. Exceptions to the driveway standards provided herein may only be granted by the Tuolumne County Fire Prevention Division in accordance with Section 15.20.050 of this code.

**11.12.062 Gates on driveways.** Gates may be installed on driveways provided they comply with the following standards:

- A. Each gate entrance shall be at least two (2) feet wider than the width of the traveled way serving the gate.
- B. All gates providing access from a road to a driveway shall be located at least thirty (30) feet from the roadway edge and shall open away from the roadway.

**11.12.063 Gates on roads.** The installation of a gate across a public road shall be prohibited. Gates may be installed on private roads that are not dedicated for public use and are limited to the use of the owner or group of owners who are responsible for maintaining the road, provided they comply with the following requirements:

- A. The installation of a gate across a fire apparatus access road shall be approved by the Tuolumne County Fire Prevention Division.
- B. Keys, codes, or other means of access through the gate shall be provided to all emergency response agencies.
- C. Where electric gates are installed, they shall have an approved means of emergency operation. The electric gates and the emergency operation shall be maintained operational at all times. Electric gate operators, where provided, shall be listed in accordance with UL 325. Gates intended for automatic operation shall be designed, constructed and installed to comply with the requirements of ASTM F 2200.
- D. Where a road is proposed to be gated, a turnaround bulb or a hammerhead turnaround shall be constructed between the gate and the adjacent intersecting road for the purpose of allowing vehicles to safely reverse direction in front of the gate without backing onto the adjacent un-gated road.

**11.12.065 One-way roads.** All one-way roads shall be constructed to provide a minimum of one twelve (12) foot wide traffic lane. All one-way roads shall connect to a two lane roadway at both ends, and shall provide access to an area currently zoned for no more than a total of ten (10) dwelling units, including both primary and secondary units. No such road shall exceed two thousand six hundred forty (2,640) feet in length. Turnouts shall be constructed as follows:

- A. For one-way roads which exceed 300 feet but are less than 800 feet in length, a turnout shall be provided at approximately the mid point of the one-way road.
- B. For one-way roads which equal or exceed 800 feet in length, turnouts shall be provided at four hundred foot intervals along the one-way road.

**11.12.067 Alleys.** Alleys, as defined in Section 17.04.070 of this code as "improved pedestrian alleyways" may be used for non-vehicular access and as "improved vehicular alleyways" may be used for vehicular access, provided they comply with the standards established in the Tuolumne Parking & Alleyway Study dated October 15, 2010, as it may be amended by the Board of Supervisors.

**11.12.070 Specifications for material and construction.**

- A. Conformance with Specifications. All materials furnished and the methods of performing any proposed work shall conform to and be done in accordance with the applicable portions of the standard specifications and this title.
- B. Cessation of Construction Due to Weather Conditions. General climate and ground moisture conditions will determine the cessation of construction. The County Engineer may notify contractors and engineers to cease construction when, in his/her opinion, conditions are such that improvements cannot be constructed to the requirements of the standards specifications or this title. Written notification by the County Engineer will be given on an individual basis as to when work may be initiated at the beginning of the construction season.
- C. Temporary Improvements. The installation of temporary improvements for winter cessation in order to make building sites accessible will be approved on an individual basis, provided that it is expressly understood that such improvements are of only a temporary nature and that they will be removed and replaced with permanent type improvements according to the approved plans and specifications and as may be indicated by the County Engineer. Plastic or pliable synthetic pipe may be installed within the roadway template for water main and sewer main purposes.

SECTION 3: If any provision of this Ordinance or the application thereof to any person or circumstances is for any reason held invalid, such invalidity shall not affect other provisions or applications of this Ordinance which can be given effect without the invalid provisions or applications thereof, and to this end the provisions of this Ordinance are severable.

SECTION 4: This Ordinance shall take effect the latter of thirty (30) days after its adoption by the Board of Supervisors of the County of Tuolumne or certification by the State of California Board of Forestry and Fire Protection. The Clerk of the Board of Supervisors is hereby authorized and directed to publish a summary of this Ordinance in the Union Democrat, a newspaper of general circulation printed and published in the County of Tuolumne, State of California, prior to fifteen (15) days after its passage.



## **FIRE SAFE REGULATIONS**

### **Title 14 Natural Resources**

#### **Division 1.5 Department of Forestry**

##### Chapter 7 - Fire Protection

##### Subchapter 2 SRA Fire Safe Regulations

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- 1276.03 Greenbelt

**Authority cited**

NOTE: Authority cited: Section 4290, Public Resources Code. Reference: Sections 4290 and 4291, Public Resources Code.

History

1. New section filed 5/30/91; operative 5/30/91 pursuant to Government Code section 11346.2(d) (Register 91, No.27)

**ARTICLE 1. ADMINISTRATION**

- 1270.00. Title
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- 1270.09. Appeals
- 1271.00. Definitions
- 1271.05. Distance Measurements
- 1272.00. Maintenance of Defensible Space Measures.

**1270.00. Title**

These regulations shall be known as “SRA Fire Safe Regulations”, and shall constitute the basic wildland fire protection standards of the California Board of Forestry.

**1270.01. Purpose**

These regulations have been prepared and adopted for the purpose of establishing minimum wildfire protection standards in conjunction with building, construction and development in SRA. A local jurisdiction may petition the Board for certification pursuant to Section 1270.03. Where Board certification has not been granted, these regulations shall become effective September 1, 1991. The future design and construction of structures, subdivisions and developments in State Responsibility Area (SRA) shall provide for basic emergency access and perimeter wildfire protection measures as specified in the following articles. These measures shall provide for emergency access; signing and building numbering; private water supply reserves for emergency fire use; and vegetation modification. The fire protection standards which follow shall specify the minimums for such measures.

**1270.02. Scope**

These regulations do not apply to existing structures, roads, streets, and private lanes or facilities. These regulations shall apply as appropriate to all construction within SRA approved after January 1, 1991. Affected activities include but are not limited to:

- (a) Permitting or approval of new parcels, excluding lot line adjustments as specified in Government Code(GC) Section 66412(d),
- (b) application for a building permit for new construction, not relating to an existing structure,
- (c) applications for a use permit,
- (d) the siting of manufactured homes (manufactured homes are as defined by the National Fire Protection Association, National Fire Code, Section 501 A, Standard for Fire Safety Criteria for Manufactured Home installations, Sites and Communities, Chapter 1, Section 1-2, Definitions, page 4, 1987 edition and Health and Safety Code Sections 18007, 18008 and 19971),
- (e) road construction, including construction of a road that does not currently exist, or extension of an existing road.

*Exemption:* Roads required as a condition of tentative parcel maps prior to the effective date of these regulations; roads for agricultural or mining use solely on one ownership; and roads used solely for the management and harvesting of wood products.

### **1270.03. Local Ordinances**

Nothing contained in these regulations shall be considered as abrogating the provisions of any ordinance, rule or regulation of any state or local jurisdiction providing such ordinance, rule regulation or general plan element is equal to or more stringent than these minimum standards. The Board may certify local ordinances as equaling or exceeding these regulations when they provide the same practical effect.

### **1270.04. Provisions for Application of these Regulations**

This subchapter shall be applied as follows:

- (a) local jurisdictions shall provide the Director with notice of applications for building permits, tentative parcel maps, tentative maps, and use permits for construction or development within SRA.
- (b) the Director shall review and make fire protection recommendations on applicable construction or development or maps provided by the local jurisdiction.
- (c) the local jurisdiction shall ensure that the applicable sections of this subchapter become a condition of approval of any applicable construction of development permit or map.

### **1270.05. Inspection Authority**

- (a) Inspection shall be made pursuant to Section 1270.06 by:
  - (1) the Director, or
  - (2) local jurisdictions that have assumed state fire protection responsibility on SRA land, or

(3) local jurisdictions where these regulations have been implemented through that jurisdiction's building permit or subdivision approval process.

(b) Reports of violations shall be provided to the CDF Ranger Unit headquarters that administers SRA fire protection in that county .

#### **1270.06. Inspections.**

The inspection authority may inspect for compliance with these regulations. When inspections are conducted, they should occur prior to: the issuance of the use permit; certificate of occupancy; the recordation of the parcel map or final map; the filing of a notice of completion; or the final inspection of any project or building permit.

#### **1270.07. Exceptions to Standards**

Upon request by the applicant, exceptions to standards within this subchapter and mitigated practices may be allowed by the inspection authority, where the exception provide the same overall practical effect as these regulations towards providing defensible space.

#### **1270.08. Request for Exceptions**

Requests for an exception shall be made in writing to the inspection authority by the applicant or the applicant's authorized representative. The request shall state the specific section(s) for which an exception is requested, material facts supporting the contention of the applicant, the details of the exception or mitigating measure proposed, and a map showing the proposed location and siting of the exception or mitigation measure.

#### **1270.09. Appeals**

Where an exception is not granted by the inspection authority, the applicant may appeal such denial to the local jurisdiction. The local jurisdiction may establish or utilize an appeal process consistent with existing local building or planning department appeal processes. Before the local jurisdiction makes a determination on an appeal, the inspection authority shall be consulted and shall provide to that local jurisdiction documentation outlining the effects of the requested exception on wildland fire protection.

If an appeal is granted, the local jurisdiction shall make findings that the decision meets the intent of providing defensible space consistent with these regulations. Such findings shall include a statement of reasons for the decision. A written copy of these findings shall be provided to the CDF Ranger Unit headquarters that administers SRA fire protection in that county.

#### **1271.00. Definitions**

**Accessory building:** Any building used as an accessory to residential, commercial, recreational, industrial, or educational purposes as defined in the California Building Code, 1989 Amendments, Chapter 11, Group M, Division 1 Occupancy that requires a building permit.

**Agriculture:** Land used for agricultural purposes as defined in a local jurisdiction's zoning ordinances.

**Building:** Any structure used or intended for supporting or sheltering any use of occupancy that is defined in the California Building Code, 1989 Amendments, Chapter 11, except Group M,

Division 1 , Occupancy. For the purposes of this subchapter, building includes mobile homes and manufactured homes, churches, and day care facilities.

**CDF:** California Department of Forestry and Fire Protection.

**Dead-end road:** A road that has only one point of vehicular ingress/egress, including cul-de-sacs and looped roads.

**Defensible space:** The area within the perimeter of a parcel, development, neighborhood or community where basic wildland fire protection practices and measures are implemented, providing the key point of defense from an approaching wildfire or defense against encroaching wildfires or escaping structure fires. The perimeter as used in this regulation is the area encompassing the parcel or parcels proposed for construction and/or development, excluding the physical structure itself. The area is characterized by the establishment and maintenance of emergency vehicle access, emergency water reserves, street names and building identification, and fuel modification measures.

**Development:** As defined in Section 66418.1 of the California Government Code.

**Director:** Director of the Department of Forestry and Fire Protection or his/her designee.

**Driveway:** A vehicular access that serves no more than two buildings, with no more than three dwelling units on a single parcel, and any number of accessory buildings.

**Dwelling unit:** Any building or portion thereof which contains living facilities, including provisions for sleeping, eating, cooking and/or sanitation for not more than one family.

*Exception:* An alternative to the specified standard requested by the applicant that may be necessary due to health, safety, environmental conditions, physical site limitations or other limiting conditions such as recorded historical sites, that provide mitigation of the problem.

**Fire valve:** See hydrant.

**Fuel modification area:** An area where the volume of flammable vegetation has been reduced, providing reduced fire intensity and duration.

**Greenbelts:** A facility or land-use, designed for a use other than fire protection, which will slow or resist the spread of a wildfire. Includes parking lots, irrigated or landscaped areas, golf courses, parks, playgrounds, maintained vineyards, orchards or annual crops that do not cure in the field.

**Hammerhead/T:** A roadway that provides a "T" shaped, three-point turnaround space for emergency equipment, being no narrower than the road that serves it.

**Hydrant:** A valved connection on a water supply/storage system, having at least one 2 1/2 inch outlet, with male American National Fire Hose Screw Threads(NH) used to supply fire apparatus and hoses with water .

**Local jurisdiction:** Any county, city/county agency or department, or any locally authorized district that issues or approves building permits, use permits, tentative maps or tentative parcel maps, or has authority to regulate development and construction activity.

**Occupancy:** The purpose for which a building, or part thereof, is used or intended to be used.

**One-way road:** A minimum of one traffic lane width designed for traffic flow in one direction only.

**Roads, streets, private lanes:** Vehicular access to more than one parcel; access to any industrial or commercial occupancy; or vehicular access to a single parcel with more than two buildings or four or more dwelling units.

**Roadway:** Any surface designed, improved, or ordinarily used for vehicle travel.

**Roadway structures:** Bridges, culverts, and other appurtenant structures which supplement the roadway bed or shoulders.

**Same practical effect:** As used in this subchapter means an exception or alternative with the capability of applying accepted wildland fire suppression strategies and tactics, and provisions for fire fighter safety, including:

- (a) access for emergency wildland fire equipment,
- (b) safe civilian evacuation,
- (c) signing that avoids delays in emergency equipment response,
- (d) available and accessible water to effectively attack wildfire or defend a structure from wildfire, and
- (e) fuel modification sufficient for civilian and fire fighter safety.

**Shoulder:** Roadbed or surface adjacent to the traffic lane.

**State Board of Forestry (SBOF):** A nine member board, appointed by the Governor, which is responsible for developing the general forest policy of the state, for determining the guidance policies of the Department of Forestry and Fire Protection, and for representing the state's interest in federal land in California.

**State Responsibility Area (SRA):** As defined in the Public Resources Code Section 4126-4127; and the California Code of Regulations, Title 14, Division 1.5, Chapter 7, Article 1, Sections 1220-1220.5.

**Structure:** That which is built or constructed, an edifice or building of any kind, or any piece of work artificially built up or composed of parts joined together in some definite manner .

**Subdivision:** As defined in Section 66424 of the Government Code.

**Traffic lane:** The portion of a roadway that provides a single line of vehicle travel.

**Turnaround:** A roadway, unobstructed by parking, which allows for a safe opposite change of direction for emergency equipment. Design of such area may be a hammerhead/T or terminus bulb.

**Turnouts:** A widening in a roadway to allow vehicles to pass.

**Vertical clearance:** The minimum specified height of a bridge or overhead projection above the roadway.

**Wildfire:** As defined in Public Resources Code Section 4103 and 4104.

#### **1271.05. Distance Measurements**

All specified or referenced distances are measured along the ground, unless otherwise stated.

#### **1272.00. Maintenance of Defensible Space Measures.**

To ensure continued maintenance of properties in conformance with these standards and measures and to assure continue availability, access, and utilization of the defensible space provided for these standards during a wildfire, provisions for annual maintenance shall be included in the development plans and/or shall be provided as a condition of the permit, parcel or map approval.

### **ARTICLE 2. EMERGENCY ACCESS**

- 1273.00. Intent
- 1273.01. Road Width
- 1273.02. Roadway Surface
- 1273.03. Roadway Grades
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- 1273.10. Driveways
- 1273.11. Gate Entrances

#### **1273.00. Intent**

Road and street networks, whether public or private, unless exempted under Section 1270.02(e), shall provide for safe access for emergency wildland fire equipment and civilian evacuation concurrently, and shall provide unobstructed traffic circulation during a wildfire emergency consistent with Sections 1273.00 through 1273.11.

#### **1273.01. Road Width**

All roads shall be constructed to provide a minimum of two nine-foot traffic lanes providing two-way traffic flow, unless other standards are provided in this article, or additional requirements are mandated by local jurisdictions or local subdivision requirements.

#### **1273.02. Roadway Surface**

The surface shall provide unobstructed access to conventional drive vehicles, including sedans and fire engines. Surfaces should be established in conformance with local ordinances, and be capable of supporting a 40,000 pound load.

#### **1273.03. Roadway Grades**

The grade for all roads, streets, private lanes and driveways shall not exceed 16 percent.

#### **1273.04. Roadway Radius**

(a) No roadway shall have a horizontal inside radius of curvature of less than 50 feet and additional surface width of 4 feet shall be added to curves of 50-100 feet radius; 2 feet to those from 100-200 feet.

(b) The length of vertical curves in roadways, exclusive of gutters, ditches, and drainage structures designed to hold or divert water, shall be not less than 100 feet.

#### **1273.05. Roadway Turnarounds**

Turnarounds are required on driveways and dead-end roads as specified in this article. The minimum turning radius for a turnaround shall be 40 feet from the center line of the road. If a hammerhead-T is used, the top of the "T" shall be a minimum of 60 feet in length.

#### **1273.06. Roadway Turnouts**

Turnouts shall be a minimum of 10 feet wide and 30 feet long with a minimum 25 foot taper on each end.

#### **1273.07. Roadway Structures**

(a) All driveway, road, street, and private lane roadway structures shall be constructed to carry at least the maximum load and provide the minimum vertical clearance as required by Vehicle Code Sections 35550, 35750 and 35250.

(b) Appropriate signing, including but not limited to weight or vertical clearance limitations, one-way road or single lane conditions, shall reflect the capability of each bridge.

(c) A bridge with only one traffic lane may be authorized by the local jurisdiction; however, it shall provide for unobstructed visibility from one end to the other and turnouts at both ends.

#### **1273.08. One-Way Roads**

All one-way roads shall be constructed to provide a minimum of one 10-foot traffic lane. The local jurisdiction may approve one-way roads. All one-way roads shall connect to a two-lane roadway at both ends, and shall provide access to an area currently zoned for no more than 10 dwelling units. In no case shall it exceed 2640 feet in length. A turnout shall be placed and constructed at approximately the midpoint of each one-way road.

#### **1273.09. Dead-End Roads**

(a) The maximum length of a dead-end road, including all dead-end roads accessed from the dead-end road, shall not exceed the following cumulative lengths, regardless of the numbers of parcels served:

parcels zoned for less than one acre-----800 feet

parcels zoned for 1 acre to 4.99 acres-----1320 feet

parcels zoned for 5 acres to 19.99 acres -----2640 feet

parcels zoned for 20 acres or larger -----5280 feet

All lengths shall be measured from the edge of the roadway surface at the intersection that begins the road to the end of the road surface at the intersection that begins the road to the end of the road surface at its farthest point. Where a dead-end road crosses areas of differing zoned parcel sizes, requiring different length limits, the shortest allowable length shall apply.

(b) Where parcels are zoned 5 acres or larger, turnarounds shall be provided at a maximum of 1320 foot intervals.

(c) Each dead-end road shall have a turnaround constructed at its terminus.

### **1273.10. Driveways**

All driveways shall provide a minimum 10 foot traffic lane and unobstructed vertical clearance of 15 feet along its entire length,

(a) Driveways exceeding 150 feet in length, but less than 800 feet in length, shall provide a turnout near the midpoint of the driveway. Where the driveway exceeds 800 feet, turnouts shall be provided no more than 400 feet apart.

(b) A turnaround shall be provided to all building sites on driveways over 300 feet in length, and shall be within 50 feet of the building.

### **1273.11. Gate Entrance**

(a) Gate entrances shall be at least two feet wider than the width of the traffic lane(s) serving that gate.

(b) All gates providing access from a road to a driveway shall be located at least 30 feet from the roadway and shall open to allow a vehicle to stop without obstructing traffic on that road.

(c) Where a one-way road with a single traffic lane provides access to a gated entrance, a 40 foot turning radius shall be used.

## **ARTICLE 3. SIGNING AND BUILDING NUMBERING**

- 1274.00 Intent
- 1274.01. Size of Letters, Numbers and Symbols for Street and Roads Signs
- 1274.02. Visibility and Legibility of Street and Road Signs
- 1274.03. Height of Street and Road Signs
- 1274.04. Names and Numbers on Street and Road Signs
- 1274.05. Intersecting Roads, Streets and Private Lanes
- 1274.06. Signs Identifying Traffic Access limitations
- 1274.07. Installation of Road, Street and Private Lane Signs
- 1274.08. Addresses for Buildings
- 1274.09. Size of Letters, Numbers and Symbols for Addresses
- 1274.10. Installation, Location and Visibility of Addresses

### **1274.00. Intent**

To facilitate locating a fire and to avoid delays in response, all newly constructed or approved roads, street, and buildings shall be designated by names or numbers, posted on signs clearly visible and legible from the roadway. This section shall not restrict the size of letters of numbers appearing on street signs for other purposes.

#### **1274.01. Size of Letters, Numbers and Symbols for Street and Roads Signs**

Size of letters, numbers, and symbols for street and road signs shall be a minimum 3 inch letter height, 3/8 inch stroke, reflectorized, contrasting with the background color of the sign.

#### **1274.02. Visibility and Legibility of Street and Road Signs**

Street and road signs shall be visible and legible from both directions of vehicle travel for a distance of at least 100 feet.

#### **1274.03. Height of Street and Road Signs**

Height of street and road signs shall be uniform county wide, and meet the visibility and legibility standards of this article.

#### **1274.04. Names and Numbers on Street and Road Signs**

Newly constructed or approved public and private roads and streets must be identified by a name or number through a consistent countywide system that provides for sequenced or patterned numbering and/or non-duplicating naming within each county. All signs shall be mounted and oriented in a uniform manner. This section does not require any entity to rename or renumber existing roads or streets, nor shall a roadway providing access only to a single commercial or industrial occupancy require naming or numbering.

#### **1274.05. Intersecting Roads, Streets and Private Lanes**

Signs required by this article identifying intersecting roads, streets and private lanes shall be placed at the intersection of those roads, streets, and/or private lanes.

#### **1274.06. Signs Identifying Traffic Access limitations**

A sign identifying traffic access or flow limitations, including but not limited to weight or vertical clearance limitations, dead-end road, one-way road or single lane conditions, shall be placed:

- (a) at the intersection preceding the traffic access limitation, and
- (b) no more than 100 feet before such traffic access limitation.

#### **1274.07. Installation of Road, Street and Private Lane Signs**

Road, street and private lane signs required by this article shall be installed. prior to final acceptance by the local jurisdiction of road improvements.

#### **1274.08. Addresses for Buildings**

All buildings shall be issued an address by the local jurisdiction which conforms to that jurisdiction's overall address system. Accessory buildings will not be required to have a separate address; however, each dwelling unit within a building shall be separately identified.

#### **1274.09. Size of Letters, Numbers and Symbols for Addresses**

Size of letters, numbers and symbols for addresses shall be a minimum 3 inch letter height, 3/8 inc stroke, reflectorized, contrasting with the background color of the sign.

#### **1274.10. Installation, Location and Visibility of Addresses**

(a) All buildings shall have a permanently posted address, which shall be placed at each driveway entrance and visible from both directions of travel along the road. In all cases, the address shall be posted at the beginning of construction and shall be maintained thereafter, and the address shall be visible and legible from the road on which the address is located.

(b) Address signs along one-way roads shall be visible from both the intended direction of travel and the opposite direction.

(c) Where multiple addresses are required at a single driveway, they shall be mounted on a single post.

(d) Where a roadway provides access solely to a single commercial or industrial business, the address sign shall be placed at the nearest road intersection providing access to that site.

### **ARTICLE 4. EMERGENCY WATER STANDARDS**

- 1275.00. Intent
- 1275.01. Application
- 1275.10. General Standards
- 1275.15. Hydrant/fire Valve
- 1275.20 Signing of Water Sources

#### **1275.00. Intent**

Emergency water for wildfire protection shall be available and accessible in quantities and locations specified in the statute and these regulations, in order to attack a wildfire or defend property from a wildfire. Such emergency water may be provided in a fire agency mobile water tender, or naturally occurring or man made containment structure, as long as the specified quantity is immediately available.

#### **1275.01. Application**

The provisions of this article shall apply when new parcels are approved by a local jurisdiction. The emergency water system shall be available on-site prior to the completion of road construction, where a community water system is approved, or prior to the completion of building construction, where an individual system is approved.

#### **1275.10. General Standards**

Water systems that meet or exceed the standards specified in Public Utilities Commission of California (PUC) revised General Order #103, Adopted June 12, 1956 (Corrected September 7,

1983, Decision 83-09-001), Section VIII Fire Protection Standards and other applicable sections relating to fire protection water delivery systems, static water systems equaling or exceeding the National Fire Protection Association (NFPA) Standard 1231, "Standard on Water Supplies for Suburban and Rural Fire Fighting", 1989 Edition, or mobile water systems that meet the Insurance Services Office (ISO) Rural Class 8, 2nd Edition 3-80, standard shall be accepted as meeting the requirements of this article. These documents are available at CDF Ranger Unit Headquarters.

Nothing in this article prohibits the combined storage of emergency wildfire and structural firefighting water supplies unless so prohibited by local ordinance or specified by the local fire agency.

Where freeze protection is required by local jurisdictions, such protection measures shall be provided. .

#### **1275.15. Hydrant/fire Valve**

(a) The hydrant or fire valve shall be 18 inches above grade, 8 feet from flammable vegetation, no closer than 4 feet nor farther than 12 feet from a roadway, and in a location where fire apparatus using it will not block the roadway.

The hydrant serving any building shall:

(1) be not less than 50 feet nor more than 1/2 mile by road from the building it is to serve, and

(2) be located at a turnout or turnaround, along the driveway to that building or along the road that intersects with that driveway.

(b) The hydrant head shall be brass with 2 1/2 inch National Hose male thread with cap for pressure and gravity flow systems and 4 1/2 inch draft systems. Such hydrants shall be wet or dry barrel as required by the delivery system. They shall have suitable crash protection as required by the local jurisdiction.

#### **1275.20 Signing of Water Sources**

Each hydrant/fire valve or access to water shall be identified as follows:

(a) If located along a driveway, a reflectorized blue marker, with a minimum dimension of 3 inches shall be located on the driveway address sign and mounted on a fire retardant post, or

(b) if located along a street or road,

(1) a reflectorized blue marker, with a minimum dimension of 3 inches, shall be mounted on a fire retardant post. The sign post shall be within 3 feet of said hydrant/fire valve, with the sign no less than 3 feet nor greater than 5 feet above ground, in a horizontal position and visible from the driveway, or

(2) as specified in the State Fire Marshal's Guidelines for Fire Hydrant Markings Along State Highways and Freeways, May 1988.

### **ARTICLE 5. FUEL MODIFICATION STANDARDS**

- 1276.00 Intent
- 1276.01 Setback for Structure Defensible Space
- 1276.02 Disposal of Flammable Vegetation and Fuels
- 1276.03 Greenbelt

#### **1276.00 Intent**

To reduce the intensity of a wildfire by reducing the volume and density of flammable vegetation, the strategic siting of fuel modification and greenbelt shall provide

- (1) increased safety for emergency fire equipment and evacuating civilians;
- (2) a point of attack or defense from a wildfire.

#### **1276.01 Setback for Structure Defensible Space**

(a) All parcels 1 acre and larger shall provide a minimum 30 foot setback for buildings and accessory buildings from all property lines and/or the center of the road.

(b) For parcels less than 1 acre, the local jurisdiction shall provide for the same practical effect.

#### **1276.02 Disposal of Flammable Vegetation and Fuels**

Disposal, including chipping, burying, burning or removal to a landfill site approved by the local jurisdiction, of flammable vegetation and fuels caused by site development and construction, road and driveway construction, and fuel modification shall be completed prior to completion of road construction or final inspection of a building permit.

#### **1276.03 Greenbelt**

Subdivision and other developments, which propose greenbelt as a part of the development plan, shall locate said greenbelt strategically, as a separation between wildland fuels and structures. The locations shall be approved by the inspection.