

CHAPTER 6

FIRE SAFETY STANDARDS

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6.0 GENERAL POLICIES

6.01 AUTHORITY

These standards are Shasta County Fire Safety Standards and are adopted by the Board of Supervisors. These standards are inclusive of “State Responsibility Area (SRA) Fire Safe Regulations”. These standards shall be administered and implemented by the County Fire Warden, his or her designees, and as otherwise authorized by the Board of Supervisors by adoption of these standards.

6.02 SCOPE

These standards are a component of the Shasta County Development Standards and enhance public and firefighter safety by establishing criteria for development. Addressed within this document are public and emergency responder access requirements, fire protection water standards, building construction standards, and fuel modification standards. ~~and storage and dispensing of flammable and combustible liquids.~~

These standards shall apply to subdivisions, parcel maps, use permits, administrative permits, building permits, mobile home installation permits, and any other developments which require the issuance of a permit by the County of Shasta.

6.03 CONSISTENCY WITH OTHER STANDARDS AND REGULATIONS

- a. Portions of these standards are required by the California Code of Regulations (CCR) Title 14, Division 1.5, Chapter 7, Subchapter 2, Articles 1-5. Such sections are noted with the CCR section in parenthesis after the section. As minimum State of California regulations, these sections would supersede other Shasta County regulations and standards.
- b. Sections not noted with the CCR in parenthesis are locally adopted standards which exceed or differ from the requirements of the regulations of the State of California. These standards are adopted by resolution and may be superseded by other Shasta County ordinances.
- c. These standards are intended to be minimum standards. If other County standards require a higher standard of development, then the other standard prevails. Where these standards require a higher standard of development, these standards prevail.

6.04 **DEFINITIONS** (CCR T.14, Section 1271.00)

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.

All Weather Access Road: Road surface with suitable aggregate material over compacted subgrade soil.

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: "Development" means the uses to which the land shall be put, the buildings to be constructed on it, and all alterations of the land and construction incident thereto.

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

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

Driveway: A vehicular access that serves no more than two parcels, 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.

Maintenance of Defensible Space Measures: To ensure continued maintenance of properties in conformance with these standards and measures and to assure continued 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.

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 firefighter 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 firefighter safety.

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 Sections 4103 and 4104.

6.1 ACCESS

- a. The following standards shall establish minimum access requirements for public safety. The road and driveway networks shall provide safe access for emergency wildland fire equipment and civilian evacuation concurrently and shall provide unobstructed traffic circulation during a wildfire emergency. The road and driveway network shall also provide all-weather, safe access for emergency personnel responding to medical aids, traffic accidents, and structure fires. The standards shall apply to subdivisions, parcel maps, use permits, administrative permits, building permits, mobile home installation permits, and any other developments which require the issuance of a permit by the County of Shasta. (CCR T. 14, Section 1273.00)
- b. In accordance with Sections 6.91 thru 6.94 of these standards, the County Fire Warden or the approving authority may approve or recommend the approval of exceptions to the access standards where the same practical effect can be achieved and where reasonable access can be provided to assure adequate evacuation routes for the public and adequate access routes for emergency personnel and equipment. In determining whether the same practical effect can be achieved, the approving authority shall apply and make findings concerning the performance criteria set forth in Section 6.92.
- c. For single family residential building permits and residential mobile home installation permits on existing lawful parcels, off-site improvements will not be required if adequate physical access is existing as determined by the County Fire Warden. Private bridges on access roads must be certified by a licensed engineer when required by the County Fire Warden. If modifications are necessary in order to provide adequate physical access for fire apparatus, then a building or grading permit ~~shall be obtained~~ may be required and the necessary modifications shall be made.
- d. For administrative and use permits, off-site improvements will not be required on public roads and streets constructed prior to January 1, 1992, if adequate physical access exists and the County Fire Warden finds that any increase in personal density created by the project will not adversely affect public safety.

6.11 GENERAL ROAD DESIGN REQUIREMENTS

Scope:

It shall be the intent of the Fire Safety Standards to provide for safe access for emergency fire equipment, civilian evacuation, and unobstructed traffic circulation by requiring the construction of continuous or through roadways and limiting the length and use of dead-end roads.

6.11.1 Dead-end Road Length:

~~The maximum length of a dead-end road shall not exceed the following cumulative lengths, regardless of the number of parcels served. Cumulative lengths refer to the combined lengths of dead-end roads accessed from the particular dead-end road in question.~~

~~Parcels less than one acre in size — 800 feet~~

~~Parcels one acre or larger in size — 1000 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 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. (CCR T.14, Section 1273.09)~~

~~All specified or referenced distances are measured along the ground, unless otherwise stated. (CCR T.14, Section 1271.05)~~

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: (CCR T.14, Section 1273.09)

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.

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

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

~~6.11.1.1 Exception:~~

Deleted

~~The County Fire Warden or approving authority may grant an exception to the maximum length dead-end road standards for parcels 40 acres or larger in size providing the cumulative dead-end road(s) servicing such a parcel are not over 5280 feet in length. In considering such an exception, the County Fire Warden or approving authority shall make findings that the exception does not adversely affect public safety in the area.~~

6.11.2 Construction Standard:

Continuous or through roads constructed in areas designated by the General Plan as Urban (UR), Suburban (SR), Commercial (C) and Industrial (I) shall be constructed in accordance with Chapter 2 of the Development Standards. Continuous or through roads constructed in all other areas, may be constructed as emergency fire escape roads as determined by the County Fire Warden and the Director of the Department of Public Works. Emergency fire escape roads shall be constructed in accordance with the minimum road standards as specified in Section 6.14 of the Fire Safety Standards.

6.11.3 Density:

Deleted

6.11.4 Open Space and Greenbelts:

Projects creating open space and greenbelt areas shall provide adequate fire department access to such areas as determined by the County Fire Warden or approving authority.

6.12 PRIVATE ROAD, PUBLIC ROAD, AND NON-RESIDENTIAL DRIVEWAY STANDARDS

- a. The following standards are minimum standards and may be superseded by the requirements of Chapter 2 of the Development Standards when said requirements are more stringent than these minimum standards.
- b. Non-residential driveways shall provide fire department access from the nearest Shasta County recognized private or public roadway to within 150 feet of any portion of the exterior wall of each building on the premises. An exception to subsection (b) may be approved by the County Fire Warden when building(s) are completely protected with an approved automatic fire sprinkler system.
- c. Following are minimum roadway and non-residential driveway construction standards:
 1. Road Width – All roads shall be constructed to provide a minimum of two, ten (10) foot traffic lanes, [not including shoulder and striping](#). These traffic lanes shall provide for two-way traffic flow to support emergency vehicle and civilian egress, (CCR T.14, Section 1273.01)
 2. Shoulders – one (1) foot wide on each side of the driving surface [in accordance with Chapter 2 of the Development Standards](#).
 3. Vertical Clearance – Fifteen (15) feet, unobstructed. (CCR T.14, Section 1273.10)
 4. Roadway Surface -
 - a. Roadways shall be designed and maintained to support the imposed load of fire apparatus weighing at least 75,000 pounds and provide an all-weather aggregate road base. Applicant shall provide engineering specifications to support design if requested by the County Fire Warden. (CCR T.14, Section 1273.02)
 - ~~b. — Those portions of roadways and driveways with grades greater than 12% shall be paved in accordance with Chapter 2 of the Development Standards.~~
 5. Roadway Radius - (CCR T.14, Section 1273.04)
 - a. Not less than 50 feet inside radius
 - b. Curves having an inside radius of 50-100 feet shall have a minimum surfacing width of ~~22~~-24 feet.

- c. Curves having an inside radius of 100-200 feet shall have a minimum surfacing width of ~~20~~ 22 feet.
- d. ~~Vertical Curvature—Vertical curves shall be designed by a licensed engineer to accommodate fire apparatus.~~

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.
(CCR T.14, Section 1273.04)

6. Roadway Turnarounds

- a. Dead-end roads shall be provided with a turnaround.
(CCR T.14, Section 1273.05 / 1273.09 / Figure 2-40)
- b. Dead-end non-residential driveways over 150 feet in length shall be provided with an ~~turnaround within 50 feet of the building~~ approved area for turning around fire apparatus. (California Fire Code, Section 503.2.5)
- c. Turnarounds are required on driveways and dead-end roads. The turning radius on a turnaround shall be forty (40) feet from the center line of the road, not including parking.
(CCR T.14, Section 1273.05 / Figure 2-40)
- d. Hammerhead or “T” turnarounds may be approved for parcel maps by the approving authority upon considering recommendations by the Department of Public Works and the County Fire Warden. Alternative turnarounds shall be constructed in accordance with Figure 2-40.
- e. Hammerhead or “T” turnarounds may be approved on non-residential driveways by the County Fire Warden. Alternative turnarounds shall be constructed in accordance with Figure 2-40.

7. Hydrant Turnouts

- a. ~~Roads and commercial driveways less than 28 feet in width shall be provided with turnouts at each fire hydrant.~~

The hydrant serving any building shall be located at a turnout or turnaround, along the driveway to that building or along the road that intersects with that driveway. (CCR T.14, Section 1275.15)

- b. Turnouts shall be a minimum of 12 feet wide and 30 feet long with a minimum 25-foot taper at each end. (CCR T.14, Section 1273.06 / 1275.15 / Figure FS-4)
 - c. An exception to the turnout requirement may be granted by the County Fire Warden when fire hydrants are required at intersections.
- 8. Roadway Structures (Bridges, Culverts, etc.) (CCR T.14, Section 1273.07)
 - a. All non-residential 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 35250, 35550, and 35750.
 - 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. One-lane bridges shall provide unobstructed visibility from one end to the other and shall be provided with turnouts at both ends per Figure FS-4.
 - d. Where a bridge or an elevated surface is part of a fire apparatus access road, the bridge shall be constructed and maintained in accordance with the American Association of State and Highway Transportation Officials Standard Specifications for Highway Bridges, (known as AASHTO HL-93).
 - e. Bridges and elevated surfaces shall be designed for a live load sufficient to carry the imposed loads of fire apparatus. Vehicle load limits shall be posted at both entrances to bridges when required.
 - f. Where elevated surfaces designed for emergency vehicle use are adjacent to surfaces which are not designed for such use, barriers, or signs, or both, as approved by the County Fire Warden, shall be installed and maintained.
- 9. Grades – shall not exceed 16%. (CCR T.14, Section 1273.03)
- 10. All one-way roads shall be constructed to provide a minimum, not including shoulders, of one 12-foot traffic lane. The County Fire Warden 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 ten (10) dwelling units. In no case shall it exceed 2,640 feet in length. A turnout shall be placed and constructed at

approximately the midpoint of each one-way road. (CCR T.14, Section 1273.08)

11. Obstructions – minimum widths and vertical clearance shall be maintained.
12. Gate Entrances (CCR T.14, Section 1273.11)
 - a. Gate entrances shall be at least two (2) feet wider than the width of the traffic lane(s) serving that gate and a minimum width of fourteen (14) feet unobstructed horizontal clearance and unobstructed vertical clearance of fifteen (15) feet.
 - b. ~~Gates shall be set back a minimum of 30 feet from the edge of pavement of adjacent roadways.~~

All gates providing access from a road to a driveway shall be located at least thirty (30) feet from the roadway and shall open to allow a vehicle to stop without obstructing traffic on that road.
 - c. Security gates shall not be installed without approval and where security gates are installed, they shall have an approved means of emergency operation. Approval shall be by the County Fire Warden. The security gates and the emergency operation shall be maintained operational at all times.
 - d. Where a one-way road with a single traffic lane provides access to a gated entrance, a forty (40) foot turning radius shall be used. (Figure 2-40)
13. Speed Control Bumps on private roads and driveways shall not exceed four (4) inches in height.
14. Turnouts shall be a minimum of twelve (12) feet wide and thirty (30) feet long with a minimum twenty-five (25) foot taper on each end. (CCR T.14, Section 1273.06 / Figure FS-4)

6.13 RESIDENTIAL DRIVEWAY STANDARDS

- a. The following standards are minimum driveway standards to be applied to residential driveways serving no more than three (3) residences located on a single parcel. Residential driveways servicing four (4) or more residences shall meet the requirements of Section 6.12. (CCR T.14, Section 1271.00 / 1273.10)
- ~~b. Residential driveways shall provide fire department access from the nearest Shasta County recognized private or public roadway to within 50 feet of each residence on the parcel. (CCR T.14, Section 1273.10)~~
- b. Following are minimum residential driveway standards:
 1. Driveway Road Width (CCR T. 14, Section 1273.10)
 - a. ~~Sixteen~~ Fourteen (14) (16) feet, unobstructed horizontal clearance.
 - b. The County Fire Warden may approve widths of twelve (12) feet for short distances. The lesser widths may be utilized at bridges, culverts, gates, and cattle guards, and in areas where unique topographic conditions exist.
 2. 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. (CCR T.14, Section 1273.10)
 3. Shoulders – One (1) foot wide on each side of driveway.
 4. Vertical clearance, fifteen (15) feet, unobstructed. (CCR T.14, Section 1273.10)
 5. Driveway Roadway Surface
 - a. Capable of supporting a 40,000-pound load. Applicant shall provide engineering specifications to support design, if requested by the County Fire Warden. (~~CCR T.14, Section 1273.02~~)
 - b. All-weather surface width of not less than ~~twelve~~ ten (10) (12) feet of the driveway. Minimum surface thickness of 4" of compacted class 3 aggregate base rock.
 - ~~c. Driveways with a grade of over 12% slope shall be paved in accordance with the flag lot driveway standard in Figure 2-16 of the Development Standards.~~
 6. Driveway Roadway Radius (CCR T.14, Section 1273.04)

- a. Horizontal curves shall have an inside radius of not less than 50 feet.
- c. ~~Vertical curves shall have a minimum length of not less than 100 feet or be designed to accommodate fire equipment as approved by the County Fire Warden or approving authority. (Figure FS-5)~~

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.

(CCR T.14, Section 1273.04)

7. Driveway Roadway Turnarounds

- a. A turnaround shall be provided to all ~~developed and undeveloped~~ building sites on driveways over 300 feet in length and shall be within 50 feet of the building. (CCR T.14, Section 1273.10)
- b. Turnarounds shall be constructed in accordance with the Shasta County Development Standards. (CCR T.14, Section 1273.05 / Figure 2-42)

8. Hydrant Turnouts – If a fire hydrant is located along a residential driveway, then a turnout shall be provided per Attachment FS-4. (CCR T.14, Sections 1273.06 / 1275.15 / Figure FS-4)

9. Driveway Roadway Structures (Bridges and Culverts): (CCR T.14, Section 1273.07)

- a. Bridges having limitations shall be posted with signs designating the limitations including vertical clearance and weight limitations. (CCR T.14, Section 1273.07)
- b. Signage, 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. Where a bridge or an elevated surface is part of a fire apparatus access road, the bridge shall be constructed and maintained in accordance with the American Association of State and Highway Transportation Officials Standard Specifications for Highway Bridges, (known as AASHTO HL-93).
- d. Bridges and elevated surfaces shall be designed for a live load sufficient to carry the imposed loads of fire apparatus. Vehicle load limits shall be posted at both entrances to bridges when required.

- e. Where elevated surfaces designed for emergency vehicle use are adjacent to surfaces which are not designed for such use, barriers, or signs, or both, as approved by the County Fire Warden, shall be installed and maintained.
10. Grades shall not exceed 16%. (CCR T.14, Section 1273.03)
11. Driveway Gate Entrances (CCR T.14, Section 1273.11)
- a. Gate entrances shall be at least two (2) feet wider than the traffic lanes serving that gate and a minimum width of fourteen (14) feet unobstructed horizontal clearance and unobstructed vertical clearance of fifteen (15) feet.
 - b. ~~Gates shall be set back a minimum of 30 feet from the edge of pavement of the adjacent roadway.~~

All gates providing access from a road to a driveway shall be located at least thirty (30) feet from the roadway and shall open to allow a vehicle to stop without obstructing traffic on that road.
 - c. Gates shall not be installed without prior approval and shall have an approved means of emergency operation. Any gate and emergency operation of that gate shall be maintained at all times.

6.14 EMERGENCY FIRE ESCAPE ROAD (EFER) STANDARDS

Scope:

The following construction standards shall apply to the creation of an emergency fire escape road. The construction standards shall apply only to the emergency fire escape road and not an existing road unless a portion of an existing road becomes part of an emergency fire escape road.

The following standards are minimum standards and may be superseded by the requirements of Chapter 2 of the Development Standards.

6.14.1 Definition:

Emergency Fire Escape Road: A road designed and constructed primarily to provide an alternate route of civilian vehicular egress, in the event of a wildfire, from an area accessed by only one ingress/egress road, and that the area served by the one ingress/egress road exceeds the minimum dead-end road length as indicated in Section 6.11.

6.14.2 Delineation:

Applicant shall submit improvement plans indicating the proposed location and placement of the emergency fire escape road to the Shasta County Fire Department and the Department of Public Works.

6.14.3 Location and Placement:

The County Fire Warden and the Director of the Department of Public Works shall determine the final location and placement of emergency fire escape roads. Emergency fire escape roads shall be located in relationship to topography, fuel types and fuel density in the project area, and serviceability of existing ingress road.

Emergency fire escape roads shall provide a second means of vehicular egress and shall be sufficiently separated from the primary vehicular ingress road to prevent both roadways from being simultaneously obstructed during a wildland fire.

6.14.4 Right of Ways:

Right-of-ways or easements shall be a minimum of 30-feet in width and shall be sufficient to permit construction and maintenance of the required road improvements. Applicant shall acquire and offer rights-of-ways or easements for dedication to the County of Shasta.

6.14.5 Construction Standards:

Emergency fire escape roads shall be either:

- a. Constructed to the standards of a permanent road division emergency fire escape road pursuant to Section 6.14.6 and be maintained by the permanent road division or,
- b. Constructed to the standards of a paved emergency fire escape road pursuant to Section 6.14.7.

6.14.6 Permanent Road Division EFER Construction Standards:

Emergency fire escape roads constructed as a permanent road division emergency fire escape road shall be constructed to the following standards and as shown in Figure FS-8.

6.14.6.1 Road Width:

- a. Minimum driving surface of two, ten (10) foot traffic lanes, [not including shoulder](#). These traffic lanes shall provide for two-way traffic flow to support emergency vehicle and civilian egress, (CCR T.14, Section 1273.01)
- b. A vegetative clear zone shall be created on each side of the road by removing vegetation smaller than 6 inches in diameter a minimum of 4 feet beyond the edge of the road.
- c. Shoulders – One (1) foot wide on each side of roadway [in accordance with Chapter 2 of the Development Standards](#).

6.14.6.2 Roadway Surface:

~~Shall be 20-foot wide.~~

Roadways shall be designed and maintained to support the imposed load of fire apparatus weighing at least 75,000 pounds and provide an aggregate base. Project proponent shall provide engineering specifications to support design, if requested by the local authority having jurisdiction. (CCR T.14, Section 1273.02)

6.14.6.3 Vertical Clearance:

Vertical clearance shall not be less than 15 feet unobstructed.
(CCR T.14, Section 1273.10)

6.14.6.4 Grades:

Grades shall not exceed 16%. (CCR T.14, Section 1273.03)

6.14.6.5 Roadway Radius: (CCR T.14, Section 1273.04)

- a. Horizontal curves shall have an inside radius of not less than 50 feet.
- b. Curves having an inside radius of 50-100 feet shall have a minimum surfacing width of ~~22~~ 24 feet.
- c. Curves having an inside radius of 100-200 feet shall have a minimum surfacing width of ~~20~~ 22 feet.

6.14.6.6 Vertical Curvature:

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.
(CCR T.14, Section 1273.04)

6.14.6.7 Roadway Structures (Bridges and Culverts): (CCR T.14, Section 1273.07)

- a. Where a bridge or an elevated surface is part of a fire apparatus access road, the bridge shall be constructed and maintained in accordance with the American Association of State and Highway Transportation Officials Standard Specifications for Highway Bridges, (known as AASHTO HL-93).

- b. Bridges and elevated surfaces shall be designed for a live load sufficient to carry the imposed loads of fire apparatus. Vehicle load limits shall be posted at both entrances to bridges when required.
- c. Where elevated surfaces designed for emergency vehicle use are adjacent to surfaces which are not designed for such use, barriers, or signs, or both, as approved by the County Fire Warden, shall be installed and maintained.

6.14.6.8 Gate Entrances:

Gates may be installed in areas so that an emergency fire escape road does not provide through access on a continual basis.

- a. Gate entrances shall be at least two (2) feet wider than the width of the traffic lane(s) serving that gate. (CCR T.14, Section 1273.11)
- b. Gates shall be designed to open without the use of a key, tools, or any special knowledge or effort. Gates shall not be locked together rendering the “break away” gate post inoperable.
- c. Gates shall not be locked or rendered unusable by using chains, bolts, and latches or barricaded unless approved and installed per Figure FS-4.
- d. EFER gate location/placement shall be approved by the County Fire Warden.

6.14.6.9 Identification:

- a. Signs shall be constructed and installed adjacent to the beginning of the emergency fire escape road as shown in Figure FS-9.
- b. Road reflectors shall be utilized as deemed appropriate by the County Fire Warden and the Director of Public Works.

6.14.7 Paved EFER Construction Standards:

Emergency fire escape roads constructed as paved emergency fire escape roads shall be constructed to the same standards in accordance with Section 6.14.6 as a permanent road division emergency fire escape road, except that the aggregate base shall be surfaced with 0.17' X 20' of asphalt concrete as shown in Figure FS-8.

6.14.8 Roadway Structures (Bridges and Culverts): (CCR T.14, Section 1273.07)

- a. All 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 35250, 35550, and 35750.
- b. Appropriate signing, including but not limited to weight or vertical clearance limitations, shall reflect the capability of each bridge.
- c. Where a bridge or an elevated surface is part of a fire apparatus access road, the bridge shall be constructed and maintained in accordance with the American Association of State and Highway Transportation Officials Standard Specifications for Highway Bridges, (known as AASHTO HL-93).
- d. Bridges and elevated surfaces shall be designed for a live load sufficient to carry the imposed loads of fire apparatus. Vehicle load limits shall be posted at both entrances to bridges when required.
- e. Where elevated surfaces designed for emergency vehicle use are adjacent to surfaces which are not designed for such use, barriers, or signs, or both, as approved by the County Fire Warden, shall be installed and maintained.

6.2 STREET SIGNS AND BUILDING NUMBERING

6.21 ADDRESS FOR BUILDINGS

- a. Every building or structure, except accessory buildings shall be permanently posted with a street address marker located with respect to the nearest public highway, street or road servicing such building or structure so as to be clearly visible and legible at all times from the roadway. Each dwelling unit shall be separately identified. (CCR T.14, Section 1274.08 / Section 1274.10)
- b. These numbers shall contrast with their background and addresses shall be Arabic numbers or alphabetic numbers. Numbers shall be a minimum of four (4) inches high, with a minimum stroke width of 0.5-inch reflectorized, contrasting with the background color of the sign. (CCR T.14, Section 1274.09)
- c. Each building, except accessory buildings, shall have a permanently posted address which shall be posted at the intersection of the driveway and the road. Addresses shall be visible from both directions of travel. Where multiple addresses are required at a single driveway, they shall be mounted on single post. (CCR T.14, Section 1274.10)
- d. Address signs along one-way roads shall be visible from both the direction of travel, and the opposite direction. Where access is by means of a private road and the address cannot be viewed from the public way, a monument, pole or other sign or means shall be used to identify the address. (CCR T.14, Section 1274.09 / 1274.10)
- e. Address posting shall be maintained. (CCR T.14, Section 1274.10)
- f. Addresses 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. (CCR T.14, Section 1274.10)
- g. 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. (CCR T.14, Section 1274.10)

6.22 STREET IDENTIFICATION SIGNING

- a. Newly constructed or approved public and private roads shall be identified by a name or number that is non-duplicating and consistent with the Shasta County road naming system. (CCR T.14, Section 1274.04)

- b. Signs identifying roads, streets, and private lanes shall be placed at the intersection of those roads, streets and/or private lanes and shall be clearly visible from both directions of travel for a distance of at least 100 feet. (CCR T.14, Sections 1274.02 / 1274.05)
- c. Letters and numbers for street and road signs shall be a minimum of 4-inch letter height, 0.5-inch stroke reflectorized, and contrasting with the background color of the sign. (CCR T.14, Section 1274.01)
- d. Road, street, and private lane signs required by this article shall be installed prior to final acceptance by the local jurisdiction of road improvements. (CCR T.14, Section 1274.07)
- e. Height of street and road signs shall be uniform county wide and meet the visibility and legibility standards of this article. (CCR T.14, Section 1274.03)

6.23 STREET LIMITATION SIGNING

- a. Newly constructed and approved public and private roads shall be provided with signs identifying any access limitations such as weight limitation, vertical clearance, dead-end road, one-way road, single-lane condition, and other similar limitations. (CCR T.14, Section 1274.06)
- b. Limitations shall be clearly posted at two locations:
 - 1. the intersection preceding the traffic limitation.
 - 2. at a location not more than 100 feet before the actual area of traffic limitation. (CCR T.14, Section 1274.06)
- c. Letters and numbers for street and road signs shall be a minimum of 4-inch letter height, 0.5-inch stroke reflectorized, and contrasting with the background color of the sign. (CCR T.14, Section 1274.01)
- d. Road, street, and private lane signs required by this article shall be installed prior to final acceptance by the local jurisdiction of road improvements. (CCR T.14, Section 1274.07)

6.3 **FIRE PROTECTION WATER STANDARDS**

With A Central Water System

- a. The standards in this section apply to new developments within the boundaries of a public or private water service jurisdiction having a pressurized water system that contains water mains that are six inches in diameter or larger in size. The standards in ~~Section 6.31 (c)~~ the California Fire Code, Appendix B will not be applied by Shasta County to permit applications for single-family residences on parcels that were created prior to January 1, 1989.
- b. For land divisions, the required water system, including hydrants, must be installed and in service or bonded prior to recording the map.
(CCR T.14, Section 1275.01)
- c. For use permits, building permits and other developments, the required water system must be installed and in service prior to the foundation inspection by the Shasta County Building Division.
- d. For single family residential construction, mobile home installation permits or for a building permit for substantial improvements to any such structures (as defined by Section 5.01.080 of the Shasta County Ordinance Code) an approved fire hydrant shall be installed at an approved location on water mains four inches or larger in size within ~~750~~ 500 feet of the parcel or, the applicant shall contribute to the fire hydrant fund.

6.31 FIRE FLOW AND HYDRANT SPACING

- a. New water facilities shall ~~provide the following~~ meet fire flow requirements listed in the California Fire Code, Appendix B, in addition to the average daily demand.
- b. Proof of the ability to comply with the fire flow requirements shall be submitted with the application for development. Proof may consist of a letter of certification from the responsible water supply entity.

~~c. See below:~~

	Land Use	Min. Flow	Min. Flow w/Sprinklers	Maximum Hydrant Spacing	Maximum Driving Distance *
1.	Single-family residential lots larger than one acre in size***	500-gpm	N/A	750'	750'
2.	Single-family residential lots, one-half to one acre in size.	750-gpm****	N/A	500'	300'
3.	Single-family residential lots, less than one-half acre in size and mobile home parks	1000 gpm****	N/A	500'	300'
4.	Multiple residential, 3-8 units per acre, one story, neighborhood business (C- 1 Zone District)	1500-gpm	1000-gpm	500'	300'
5.	Multiple residential, 9 or more units per acre; one and two stories; commercial or industrial buildings not to exceed 10,000-square feet **	2000-gpm	1250-gpm	300'	200'
6.	Multiple residential, 3 stories or higher; commercial or industrial buildings over 10,000 square feet**	2500-gpm	1500-gpm	300'	200'

~~See next page for asterisked items.~~

~~* Maximum Driving Distance from Hydrant to Building~~

~~** For specific projects or occupancies, greater fire flows may be required.~~

~~*** For land divisions creating large lots, a maximum of one hydrant per proposed building site shall be required.~~

~~**** Fire flows of not less than 500 gpm will be acceptable if the responsible water supply entity is implementing an adopted capital improvement plan to upgrade the water system to provide the needed fire flows. Plans shall be approved by the County Fire Warden.~~

~~d. Fire flows and hydrant spacing for new developments utilizing the planned development zone district, density averaging or clustering will be based upon the actual density created by the clustering.~~

b. In order to qualify for the sprinkler fire flow reduction, a building must be completely protected by an automatic sprinkler system installed in accordance with NFPA 13 and the latest edition of the California Building Code Standards. Approved backflow prevention device(s) may be required by the responsible water supply entity.

e. If the fire flows listed in the California Fire Code, Appendix B are greater than those required by the Insurance Services Office (ISO) Guide for Determination of Needed Fire Flow, the lesser fire flow shall be allowed for the development. However, system design may be required to meet higher fire flow requirements for future development or expansion.

f. On residential and commercial projects where minimum fire flow or hydrant size or spacing cannot be achieved, the Fire Warden may, where reasonable fire protection can otherwise be supplied, approve reduced fire flows, hydrant size or increase spacing if alternate facilities or construction methods can be provided to assure reasonable fire protection. (CFC, Sections B103.1 and B103.2)

6.32 **DURATION**

Deleted- Refer to current edition of the California Fire Code.

~~The minimum fire flow requirements detailed in Section 6.31 above shall be sustained for a period of at least two hours.~~

6.33 **PRESSURE**

Deleted- Refer to current edition of the California Fire Code.

~~The water supply system shall be designed to maintain normal operating pressures of not less than 20 psi at the required fire flow. Static pressure at the hydrant should not exceed 150 psi.~~

6.34 WATER LINE SIZE AND DESIGN

The distribution system shall be of adequate size and so designed, in conjunction with related facilities, to maintain the minimum fire flow and pressure required. Minimum pipe size for new water lines that supply or may be anticipated to supply fire hydrants shall be not less than six inches in diameter. Water line materials shall be approved by the responsible water supply entity.

6.35 LOCATION

- a. Fire hydrants shall be attached to the distribution system at locations approved by the responsible fire protection agency and water supply entity providing service.
- b. Fire hydrants should be located not closer than 50' to the building being protected unless a second hydrant is available as approved by the responsible fire department. (CCR T.14, Section 1275.15)
- c. Fire hydrants installed after January 1, 1992, shall be located at a turnout or turnaround along the road or driveway so that fire apparatus using the hydrant will not block the roadway. (CCR T.14, Section 1275.15)
- d. Turnouts shall be constructed in accordance with Figure FS-4. An exception to the turnout may be granted by the County Fire Warden when fire hydrants are located at intersections. (CCR T.14, Section 1273.06 / 1275.15)

6.36 MATERIALS AND HYDRANTS

- a. Six-inch fire hydrants shall conform to A.W.W.A. standards with one 4 ½" and two 2 ½" NST connections. All fire hydrants shall be a dry barrel type. Each hydrant shall be fitted with a 5 ¼" main valve opening and installed per Figure FS-2.
- b. Fire hydrants shall be:
 1. Mueller Centurion A-423
 2. Kennedy Guardian K-81A
 3. Waterous Pacer WB-6 (with oil reservoir, bronze seat ring, weather shield, one piece bronze nut and mechanical attached nozzles)
 4. or equivalent, as approved by the respective water service and fire protection agency.
- c. Each hydrant gate valve shall be supplied with an 8" valve box with metal cover, set to finish grade and installed to allow operation of gate valve per Figure FS-2.

- d. All hydrants, valves, fittings, pipe, and installation shall be approved by the responsible fire protection agency and water supply entity providing service.
- e. Protective barriers shall be provided when required by the respective fire department or water supply entity and shall be installed per Figure FS-3.
(CCR T. 14, Section 1275.15)

6.37 HYDRANT INSTALLATION

- a. Fire hydrants shall be installed in accordance with Figure FS-2 and items 1 through 6 of Figure FS-1.
- b. Hydrant installations are to be inspected in a timely manner by the responsible water supply entity or fire agency prior to burial.

6.38 HYDRANT MAINTENANCE AND MARKING

- a. It is essential that hydrants be in operable condition when they are needed; therefore, hydrant maintenance is an important part of these standards.

It is recommended that water and fire districts enter into an agreement to specify which maintenance tasks will be the responsibility of each respective district.

- b. A written record of hydrant inspections and maintenance should be maintained.
- c. The following hydrant maintenance schedule is recommended:

2-year intervals

- Paint hydrant - taking care that paint does not interfere with valve stem operation or cap removal

1-year interval

- Flush and flow-test hydrant

6-month interval

- Check for leaks in valves and repair
- Operate and check street valve
- Lubricate valve stem
- Lubricate threads on outlets and caps

- d. Marking – Public hydrant barrels should be painted chrome yellow in color; private hydrant barrels should be painted red in color.
- e. Hydrants installed after January 1, 1992, shall be identified by reflectorized blue markers. (CCR T.14, Section 1275.20)
 - 1. On paved roadways located below 2,000-foot elevation, reflectorized blue markers shall be installed in accordance with the State Fire Marshal's Guidelines for Fire Hydrant Markings along State Highways and Freeways. (May 1988) See Figure FS-7;

or

Hydrants shall be identified by a reflectorized blue dot (minimum (3) three-inch diameter) mounted on a metal post located within three (3) feet of the hydrant. The blue dot shall be three (3) feet to five (5) feet above ground level and clearly visible from the road/driveway. (CCR T.14, Section 1275.20)

- 2. Along paved roads located at or above the 2,000-foot elevation and along unpaved roads or driveways, hydrants shall be identified by a reflectorized blue marker on a metal post as specified above. (CCR T.14, Section 1275.20)
- f. Flammable vegetation shall be cleared within eight (8) feet of fire hydrants. (CCR T.14, Section 1275.15)
- ~~g. Landscaping over four (4) inches in height shall not be permitted within eight (8) feet of fire hydrants.~~
- f. Fences, structures, obstructions, and hydrant protection posts shall not be permitted within three (3) feet of fire hydrants. ([California Fire Code, Section 507.5.5](#))

6.4 FIRE PROTECTION WATER STANDARDS

No Central Water System

The following standards shall apply for new developments within areas without a central water distribution facility (either public or private) as described in Section 6.3a.

6.41 DEVELOPMENT WITHIN A WATER AGENCY SPHERE OF INFLUENCE

Developments within the sphere of influence of a public water agency or adjacent to a private water system (as described in Section 6.3) may be required to connect to the water system and to meet the requirements of Section 6.3 [and the California Fire Code](#). The [respective County Fire District Warden](#) and water supply entity shall make recommendations to the Planning Commission or other appropriate board as to whether or not connection to the water system should be required.

6.42 RESIDENTIAL REQUIREMENTS

- a. Each project shall be analyzed for individual requirements by the responsible fire department. Single-family residences outside the boundaries of a public or private water system will normally have water supplied by a fire department water tender. (CCR T.14, Section 1275.10).
- b. Land divisions that create parcels less than two acres in size shall construct a central water system meeting the requirements listed in Section 6.3 [and the California Fire Code](#).
- c. Land divisions that create parcels less than five acres in size shall be located within five road miles of a fire station. Said fire station shall be recognized by the County Fire Warden as being capable of providing fire protection services to the lots being created.
- d. If usable and reliable water supplies exist on site, the responsible fire department may require access to such supplies. Access may be either an all-weather road for direct drafting or a gravity flow minimum 3" feeder line with 2 ½" NST gated valve outlet. Examples of water supplies are swimming pools, ponds, lakes, creeks, streams, irrigation ditches, etc.
- e. [Fire sprinklers shall be installed in all new residential construction, including but not limited to, one-, two-, multi-family dwellings, and townhouses. Residential fire sprinklers shall comply with the National Fire Protection Agency 13D. \(California Fire Code, Section 903.2.8\)](#)

6.43 FIRE FLOW - COMMERCIAL

- a. Commercial, industrial, multiple residential (4 units or more) and public assemblies shall develop a private water system that meets the ISO Schedule for Needed Fire Flow, ~~June 1980 Edition~~ most current edition;

or

Shall participate in a public entity that has plans for developing a water system to provide the needed fire flows. Said plans shall be approved by the County Fire Warden or his representative.

- b. On projects where minimum fire flow, hydrant size or spacing cannot be achieved, the Fire Warden may, where reasonable fire protection can otherwise be supplied, approve reduced fire flows, hydrant size or increase spacing if alternate facilities or construction methods can be provided to assure reasonable fire protection.

6.5 BUILDING CONSTRUCTION STANDARDS

6.51 BUILDING SETBACKS

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, whichever is greater. (CCR. T.14, Section 1276.01)

~~All buildings and accessory buildings constructed on parcels one acre or larger in size shall be setback a minimum of thirty (30) feet from all property lines and road easements. (CCR T.14, Section 1276.01)~~

For parcels less than 1 acre, the local jurisdiction shall provide for the same practical effect. Refer to Shasta County Zoning Plan, Ordinance 17.84.020.

6.52 ROOFING

Deleted- Refer to current edition of the California Building Code.

~~Roofing materials on buildings and accessory buildings constructed within Shasta County shall have a Class "A" or Class "B" fire retardancy rating as specified by California Building Code.~~

6.53 CHIMNEY

Deleted- Refer to current edition of the California Building Code.

~~Each structure equipped with a fireplace, stove, or other device that burns any solid or liquid fuel shall provide and maintain a spark arrester over the outlet of the chimney, stovepipe or duct as specified in this section (Public Resources Code 4291).~~

~~A spark arrester is defined as a device constructed of nonflammable material, 12-gauge minimum welded or woven wire mesh, with ½ inch openings or cast iron plate, 3/16-inch minimum thickness or other material found satisfactory by the enforcement agency and having ½ inch perforations for arresting burning carbon or sparks installed in such a manner as to be visible for the purposes of inspection and maintenance as required by Title 24, California Administrative Code, Section 2-1217.~~

6.54 RAFTERS

Deleted- Refer to current edition of the California Building Code.

~~The spaces between rafters, the wall plate line and the underside of the roof sheathing shall be filled with solid blocking. No more ventilation than the minimum required by California Building Code shall be allowed. All vent spacing's required by California Building Code shall be screened.~~

6.6 FUEL MODIFICATION

6.61 DISPOSAL OF VEGETATION

Disposal, including chipping, burning or removal to a landfill site approved by the local jurisdiction, of flammable vegetation and fuels removed during or caused by site development and/or construction, road and driveway construction, or fuel modification, shall be completed prior to recording the map for land divisions or final inspection for building permits. Disposal of vegetation by on-site burial is not permitted. (CCR T.14, Section 1276.02)

6.62 GREENBELTS

Subdivisions and other developments, which propose greenbelts such as parks, golf courses, irrigated landscaped areas, playgrounds, parking lots, orchards, etc. as a part of the development plan, shall locate said greenbelts strategically to provide a separation between wildland fuels and structures. The location of greenbelts shall be approved by the County Fire Warden and may be consistent with the CAL FIRE Shasta-Trinity Unit Fire Management Plan. (CCR T.14, Section 1276.03)

6.63 VEGETATION CLEARANCES AROUND STRUCTURES

Combustible vegetation shall be cleared around all structures for a distance of not less than ~~30~~ 100 feet on each side; or to the property line, or in compliance with PRC 4291. This does not apply to specimen trees or irrigated landscaping that will not transmit fire from the native vegetation to the structure. (Public Resources Code Section 4291)

6.7 FLAMMABLE AND COMBUSTIBLE LIQUIDS

Deleted- Refer to current edition of the California Fire Code.

6.71 ABOVEGROUND STORAGE TANKS FOR MOTOR VEHICLE FUEL – DISPENSING STATIONS

Deleted- Refer to current edition of the California Fire Code.

- ~~a. Except as provided in Sections 6.72 and 6.73, flammable and combustible liquid storage tanks at motor vehicle fuel dispensing stations shall be located in accordance with Title 24, Part 9 of the California Fire Code as adopted by the County of Shasta.~~
- ~~b. The County Fire Warden and his/her designees may grant approval in writing for the installation of aboveground storage tanks for flammable and/or combustible fuels for motor vehicle fuel dispensing stations as set forth in Sections 6.72 and 6.73.~~
- ~~c. Fuel dispensing stations shall obtain any required permits or clearances from the Shasta County Planning Division.~~
- ~~d. Prior to operation of a fuel dispensing station, an approved Hazardous Material Business Plan shall be filed with the Shasta County Division of Environmental Health.~~
- ~~e. Storage of over 600 gallons requires notification to State Water Resource Control Board.~~

6.72 VAULTED TANKS OF CONCRETE OR EQUIVALENT

Deleted- Refer to current edition of the California Fire Code.

- ~~a. Vaulted tanks may be located at commercial, industrial, governmental, or manufacturing establishments and are only intended for fueling vehicles used in connection with the business.~~
- ~~b. Class I and Class II liquids (such as diesel and gasoline) may be dispensed into motor vehicles from listed and approved concrete vaulted tanks or tanks providing equivalent fire protection of not less than two hours on all tank surfaces. Tanks shall have UL Listing Label attached.~~

- ~~c. Tanks shall not exceed 2,000 gallons individual or aggregate capacity, except for Class II liquids installed in accordance with Section 6.73 and/or exceptions processed in accordance with Section 6.91 through 6.94.~~
- ~~d. Tanks shall be located a minimum of fifteen (15) feet from all property lines and fifteen (15) feet from any buildings on the same property.~~
- ~~e. Vaulted Tanks shall be provided with automatic fuel shut-off devices capable of stopping the delivery of fuel when the level in the tank reaches 90 percent of tank capacity.~~
- ~~f. Warning and identification signs shall be clearly posted on the tank in accordance with the current edition of the California Fire Code. Signs shall identify tank contents and flammability; prohibit smoking and open flames within 25 feet; and require vehicle motors to be stopped when fueling.~~
- ~~g. Protection posts shall be installed in accordance with Figure FS-3 to safeguard the tank against damage from vehicles.~~
- ~~h. Dispensing systems shall be in accordance with the current edition of the California Fire Code. Dispensing devices are allowed to be installed on top of vaulted tanks. Antisiphon devices shall be installed at each pipe connection when such piping extends below the top of the tank.~~
- ~~i. Venting and electrical controls, including emergency pump shut-off switch, shall be in accordance with the current edition of the California Fire Code. A permit shall be obtained from the Building Division for all electrical work.~~
- ~~j. A fire extinguisher with a minimum 2-A, 20B:C rating shall be provided within 75 feet walking distance of the vaulted tank and dispensing area at a location approved by the fire agency having jurisdiction.~~
- ~~k. Simultaneous tank filling and fuel dispensing into motor vehicles is prohibited and signs shall be posted to this effect.~~
- ~~l. The vaulted tank area and dispensing area shall be graded in such a manner that any fuel spilled will not drain towards buildings or other exposures.~~

6.73 ABOVEGROUND STORAGE TANKS WITHOUT VAULTS

Deleted- Refer to current edition of the California Fire Code.

- ~~a. Aboveground tanks may be located at commercial, industrial, governmental, or manufacturing establishments and are only intended for fueling vehicles used in~~

~~connection with the business and/or as otherwise permitted by Article 79 of the current edition of the California Fire Code.~~

- ~~b. Aboveground tanks without vaults may only be located in the following zone districts and/or as otherwise permitted by the current edition of the California Fire Code:~~
 - ~~1. Exclusive Agriculture (EA) District~~
 - ~~2. Timber Production (TP) District~~
 - ~~3. Timberland (TL) District~~
 - ~~4. Mineral Resource (MR) District~~
 - ~~5. Light Industrial (M-L) District~~
 - ~~6. General Industrial (M) District~~
 - ~~7. Public Facilities (PF) District~~
- ~~c. Only Class II fuels (such as diesel) may be dispensed into motor vehicles from approved or listed aboveground tanks without vaults. Class I fuels (such as gasoline) shall be dispensed from underground tanks special enclosures, or vaulted tanks as specified in Section 6.7.2 and the current edition of the California Fire Code.~~
- ~~d. Aboveground tanks shall have a maximum individual capacity of 12,000 gallons and a maximum aggregate capacity of 24,000 gallons.~~
- ~~e. Tanks shall be located a minimum of:~~
 - ~~1. 100 feet from any property line.~~
 - ~~2. 50 feet from the nearest side of the edge of a road, not including internal driveways on the parcel.~~
 - ~~3. 50 feet from any building on the same property.~~
 - ~~4. 50 feet from any fuel dispenser.~~
- ~~f. Only tanks that are designed, and approved or listed for aboveground storage of Class II combustible liquids shall be used. Underground tanks shall not be installed for aboveground use.~~
- ~~g. The area surrounding the tank(s) shall be provided with a concrete and/or solid masonry diked area with a concrete floor. The volumetric capacity of the diked area shall not be less than 115 percent of the amount of Class II fuel stored within the diked area. Walls of diked areas shall not exceed six (6) feet above the interior grade. Walls shall be designed and certified by a licensed engineer to be liquid tight and to withstand a full hydrostatic head. The concrete floor of the diked area shall slope away from the tanks towards the walls of the dike. Diked areas containing two or more tanks shall be subdivided by channels or~~

- ~~intermediate dikes. Provisions shall be made for draining or removing water from diked areas in a manner that will protect the environment and not constitute a hazard. Water removal by a sump and pump is preferred; however, drainage by a valve which is operable from outside the dike is acceptable. Such a valve shall be kept locked in the closed position except when water is being drained from the diked area.~~
- ~~h. A means shall be provided for determining the liquid level in each tank and this means shall be accessible to the delivery operator. Provisions shall be made either to automatically stop delivery of liquid to the tank when the liquid level in the tank reaches 98 percent of capacity or to sound an audible alarm when the liquid level in the tank reaches 95 percent of capacity.~~
 - ~~i. Class II liquids shall not be dispensed from the tank by gravity flow or by pressurization of the tank. An antisiphon device shall be installed to prevent the release of fuel by siphon flow. A solenoid valve may be required at the tank outlet when the tank elevation produces a gravity head.~~
 - ~~j. If a submersible pump system is used, a listed emergency shut-off valve shall be installed at each dispensing device. If a suction pump type dispensing device is used, a listed vacuum activated shut-off valve with a shear section or equivalent type valve shall be installed directly under each dispensing device.~~
 - ~~k. Piping shall be protected from physical damage. Piping subject to external corrosion shall be protected by approved or listed corrosion resistant materials such as fiberglass reinforced plastic.~~
 - ~~l. Tanks shall be protected from unauthorized entry either by chain-link fence at least six (6) feet high around the tank or around the perimeter of the yard area.~~
 - ~~m. Diked areas shall be kept free of vegetation and combustible materials.~~
 - ~~n. The delivery connection shall be located within the diked area. A check valve and shut-off valve with a quick connect coupling or a dry break valve shall be installed at the connection and disconnection location for tank filling.~~
 - ~~o. Tanks and dispensing areas shall be clearly posted with warning and identification signs in accordance with the current edition of the California Fire Code.~~
 - ~~p. The remote fuel dispensing system shall be protected against physical damage by a six (6) inch high concrete curb or protection posts installed in accordance with Figure FS-3.~~
 - ~~q. Venting and electrical controls including the emergency pump shut-off switch shall be in accordance with the current edition of the California Fire Code.~~

- ~~r. A permit shall be obtained from the Building Division for the tank foundations and all electrical work.~~
- ~~s. A fire extinguisher with a minimum 2-A:20-B:C rating shall be provided within 75 feet walking distance of the diked tank area and the dispensing area at a location approved by the fire agency having jurisdiction.~~
- ~~t. Plans for the motor vehicle fuel dispensing facility and the aboveground tank installation shall be submitted to the County Fire Warden or fire agency having jurisdiction for review and approval prior to any construction.~~

6.8 (Reserved for future additions to Standards.)

6.9 POLICIES AND STANDARDS; EXCEPTIONS; APPEALS

6.91 POLICIES AND STANDARDS NOT A LIMITATION

The policies and standards established by this chapter are not a limitation upon the powers of an approving authority to protect public health and safety and to ensure consistency between the projects and all elements of the General Plan, all other applicable laws, policies and standards of Shasta County, and all applicable state and federal laws and standards. The approving authority by 4/5 vote or greater may, with appropriate findings, grant an exception to the design and construction standards for an individual project in order to avoid physical obstructions which are extremely difficult or impossible to remove; to avoid irreparable damage to natural features; and to handle similar situations which are unforeseen by these standards. Exceptions from the generally applicable Standards shall result in the same practical effect of the general standards by meeting the performance criteria listed in Section 6.92.
(CCR T.14, Section 1270.07)

6.92 CRITERIA FOR EXCEPTIONS AND APPEALS

- a. The approving authority shall apply the following criteria when granting exceptions or appeals:
 1. Exceptions shall provide defensible space consistent with the “SRA Fire Safe Regulations.” (CCR T.14, Section 1270.09)
 2. Exceptions shall provide safe emergency access for fire equipment.
 3. Exceptions shall provide for unobstructed traffic circulation during an emergency.
 4. Exceptions shall provide for safe civilian evacuation during an emergency.
 5. Exceptions shall not cause delays in emergency response or interfere with the ability of emergency personnel to locate an incident.
 6. Exceptions shall provide a sufficient quantity of water for both wildfire and structural firefighting at a location where it is immediately available to emergency personnel.
 7. Exceptions shall not result in fuel modification that would adversely affect access or defensible space thereby jeopardizing civilian and firefighter safety.

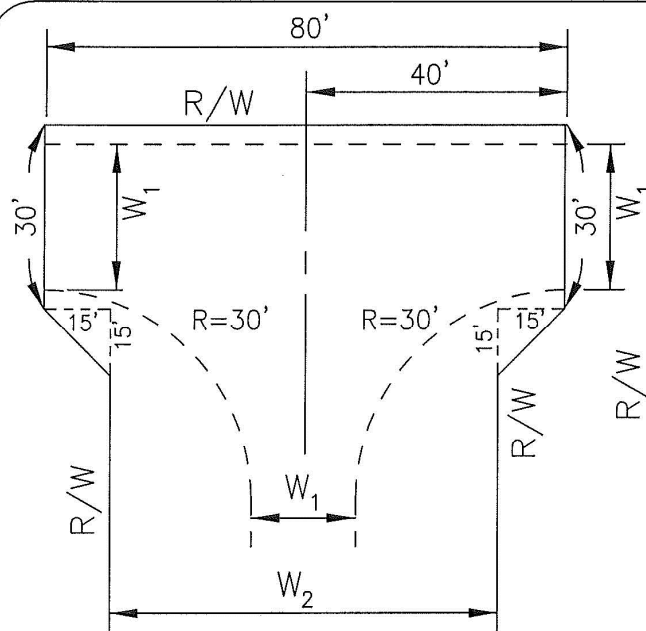
- b. The approving authority shall consider recommendations from the County Fire Warden ~~and/or the fire agency having jurisdiction~~ in the exception or appeals process. The County Fire Warden ~~and/or the fire agency having jurisdiction~~ shall provide documentation outlining the effects of the requested exception on fire protection services.
- c. The approving authority shall make a written statement of findings as to the reason for the decision. A copy shall be provided to the applicant and the County Fire Warden.

6.93 EXCEPTIONS

- a. Requests for exceptions shall be made in writing to the County Fire Warden by the applicant or the applicant's authorized representative. Requests shall state the specific section(s) for which an exception is requested, material facts supporting or justifying the exception, and proposed alternative mitigation measures. (CCR T.14, Section 1270.08)
- b. For projects or permits under the jurisdiction of the Planning Division, the County Fire Warden will forward requests for exceptions to the Planning Commission or Board of Administrative Review along with his or her recommendations. The Planning Commission or Board of Administrative Review may grant or deny an exception in accordance with Section 6.92. A request for exception on a project subject to an administrative permit may, at the discretion of the Director of Resource Management, be referred to the County Fire Warden for approval or denial of the exception in accordance with Section 6.92.
- c. For permits under the jurisdiction of the Building Division, the County Fire Warden may grant or deny the exception in accordance with Section 6.92.

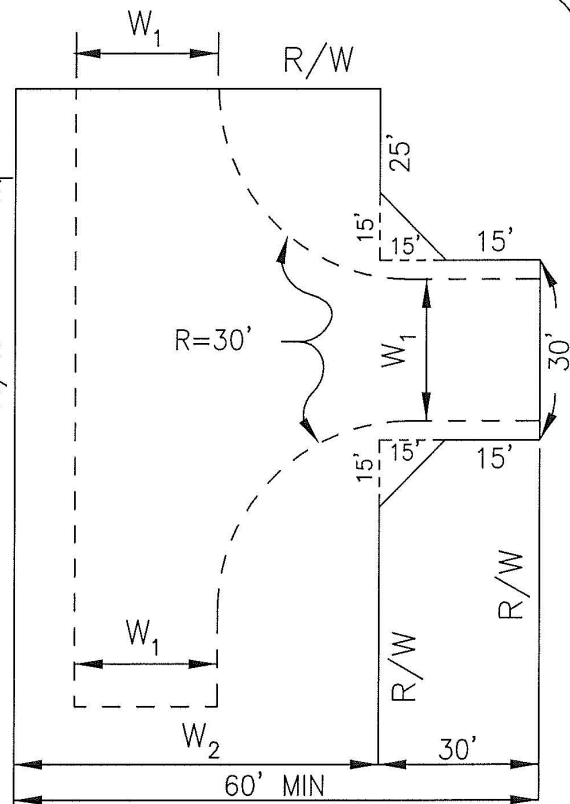
6.94 APPEALS (CCR T.14, Section 1270.09)

- a. Where an exception is not granted by the approving authority, appeals shall be processed in the manner provided for in the Shasta County Code. Planning Commission or Board of Administrative Review appeals shall be processed in accordance with Section 15.08.140. Building permit appeals shall be processed in accordance with Section 16.04.080.
- b. Upon appeal, the Board of Building Appeals may grant or deny an exception in accordance with Section 6.92.
- c. Upon appeal, the Board of Supervisors may grant or deny an exception in accordance with Section 6.92.

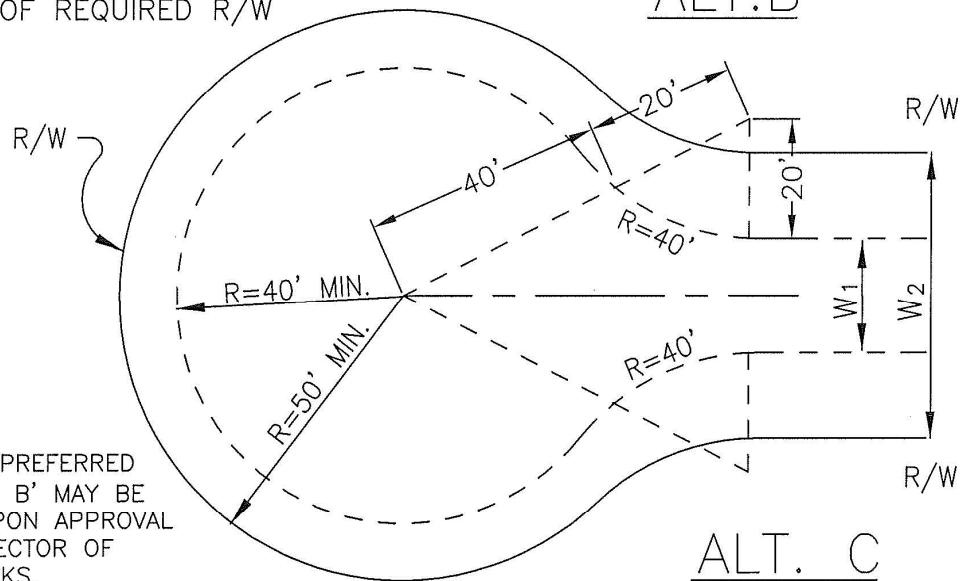


ALT. A

----- EDGE OF PAVEMENT
 W_1 WIDTH OF PAVEMENT - 20'
 MIN FOR ROADS, 12' MIN FOR
 RESIDENTIAL DRIVEWAYS
 W_2 WIDTH OF REQUIRED R/W



ALT. B

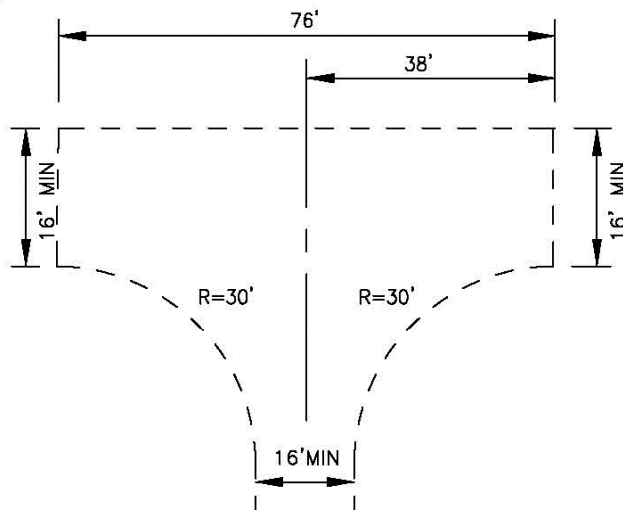


ALT. C

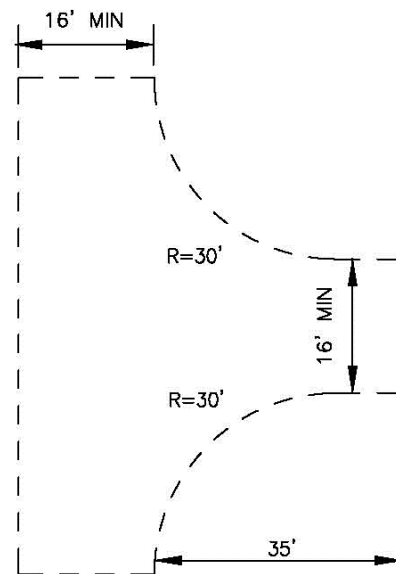
NOTES

ALT. 'C' IS PREFERRED
 ALT 'A' AND B' MAY BE
 ALLOWED UPON APPROVAL
 BY THE DIRECTOR OF
 PUBLIC WORKS.

SCALE: NTS	DATE: 1996	SHASTA COUNTY DEPARTMENT OF PUBLIC WORKS	
DWG No.		APPROVED BY:	<u>TURNAROUND</u>
13	DATE: 2015		<u>ALTERNATES</u>
Fig 2-40	REVISION		FOR RURAL GENERAL PLAN DESIGNATIONS

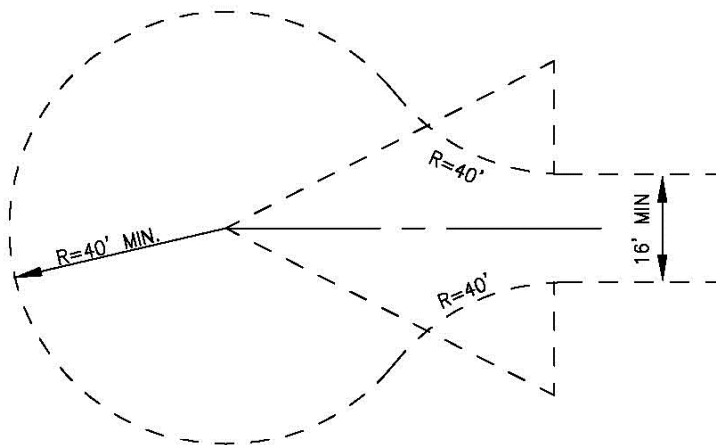


ALT. A



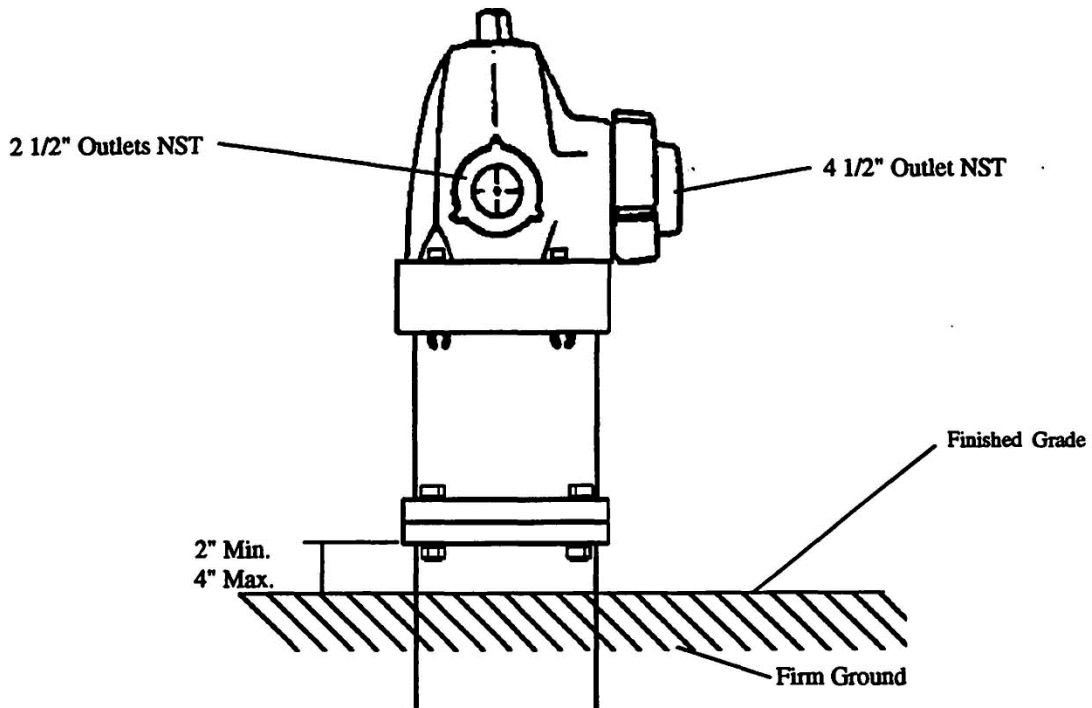
ALT. B

--- BOUNDARY OF CLEARED AND
LEVELED AREA



ALT. C

SCALE: NTS	DATE: 1996	SHASTA COUNTY DEPARTMENT OF PUBLIC WORKS	
	DATE: 2015	APPROVED BY:	MINIMUM FIRE STANDARD TURNAROUND ALTERNATES (FOR RESIDENTIAL DRIVEWAYS OVER 300 FEET IN LENGTH)
Fig 2-42	REVISION		



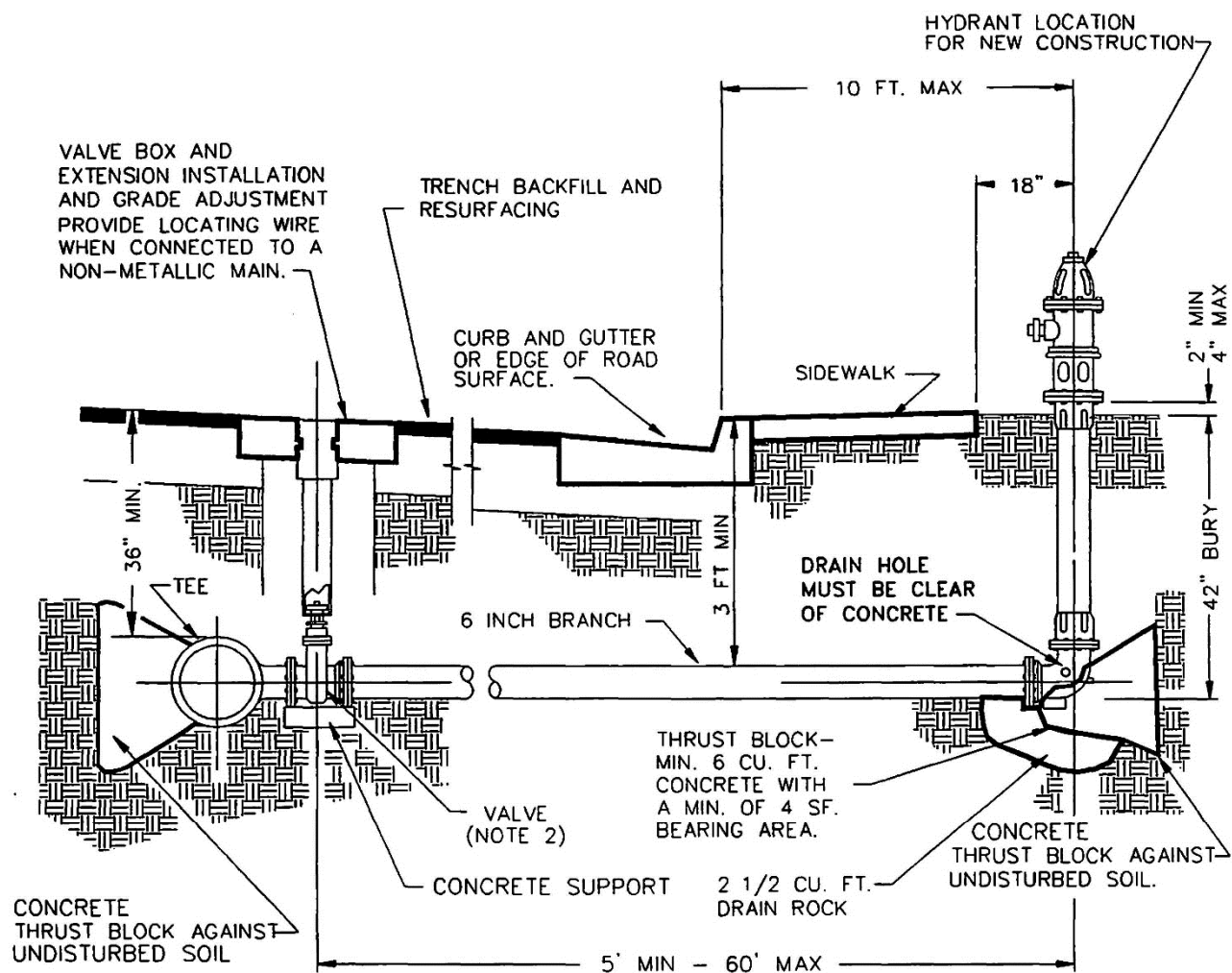
NOTES:

- (1) Each hydrant must be gated between the hydrant and street main.
- (2) Each hydrant shall be placed in such a manner that the 4 1/2 inch outlet faces the street.
- (3) Fire hydrants shall be placed a minimum of 4 feet and maximum of 10 feet from the edge of the road surface or turnout, or as otherwise approved by the respective fire district and water service entity.
- (4) Barrel must be of dry type.
- (5) Hose threads on outlets shall be National Standard dimensions.
- (6) Hydrants shall NOT be less than 18 inches or more than 25 inches above the grade of the roadway or driveway.

STATE OF CALIFORNIA
COUNTY OF SHASTA
FIRE DEPARTMENT

**MINIMUM FIRE STANDARD
FIRE HYDRANT
DRY BARREL TYPE**

Fig. FS-1



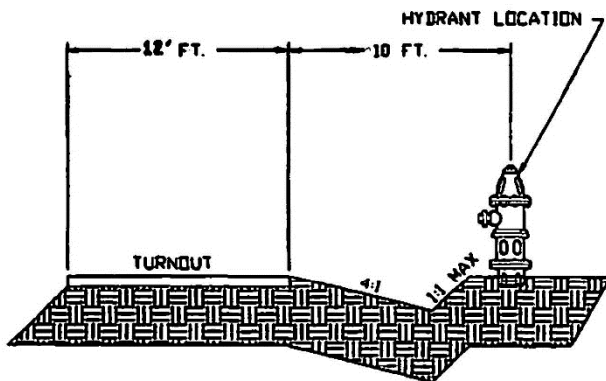
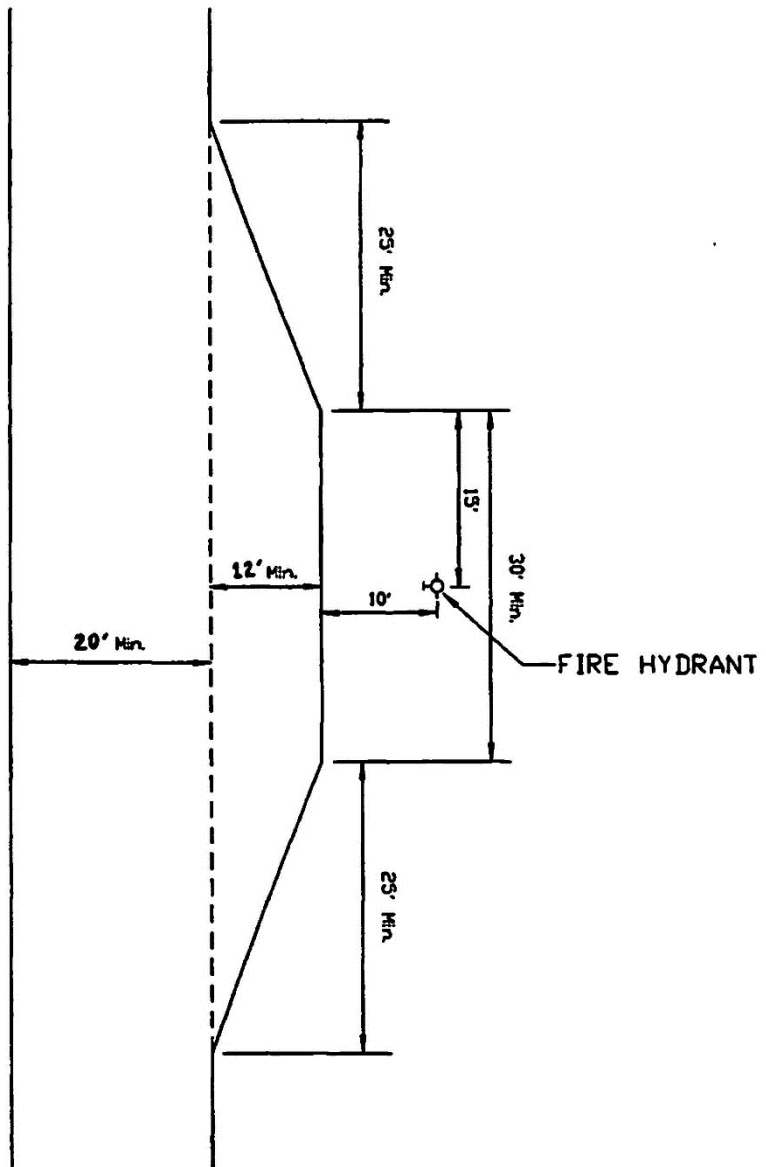
NOTES:

1. ALL CONSTRUCTION SHALL BE INSPECTED BY THE RESPONSIBLE AGENCY PRIOR TO BURIAL.
2. FOR ALLOWABLE FIRE HYDRANTS, VALVES, PIPE AND FITTINGS SEE SECTION 5.36. (GATE VALVE ACCORDING TO A.W.W.A. STANDARDS)
3. HYDRANT BURY DEPTH MAY VARY WITH PRIOR APPROVAL OF THE WATER SERVICE ENTITY.
1. PRIVATE ON-SITE HYDRANT LOCATIONS TO BE APPROVED BY THE FIRE AGENCY HAVING JURISDICTION.

STATE OF CALIFORNIA
COUNTY OF SHASTA
FIRE DEPARTMENT

FIRE HYDRANT INSTALLATION

Fig. FS-2

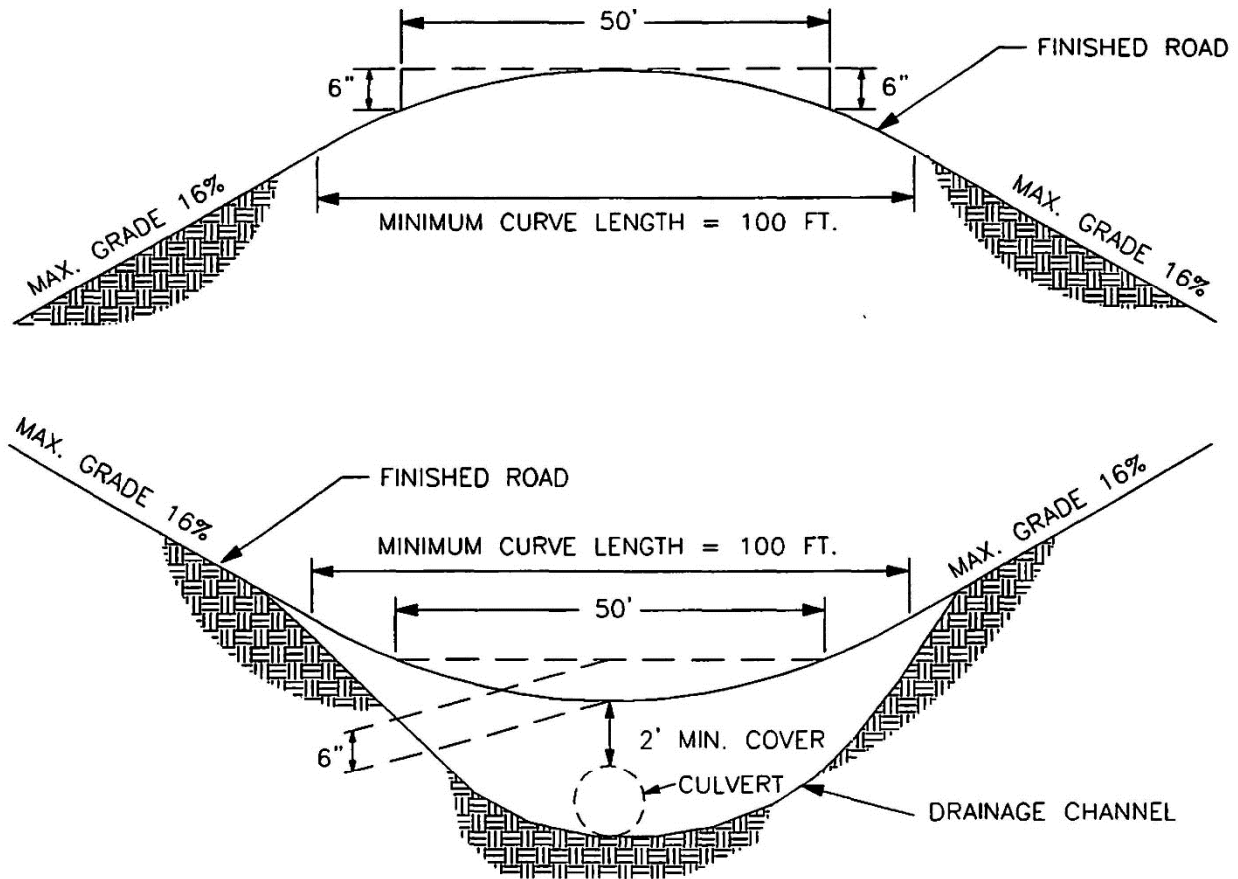


STATE OF CALIFORNIA
COUNTY OF SHASTA
FIRE DEPARTMENT

TURNOUT
FOR FIRE HYDRANTS

Fig. FS-4

*** NOT DRAWN TO SCALE



NOTES:

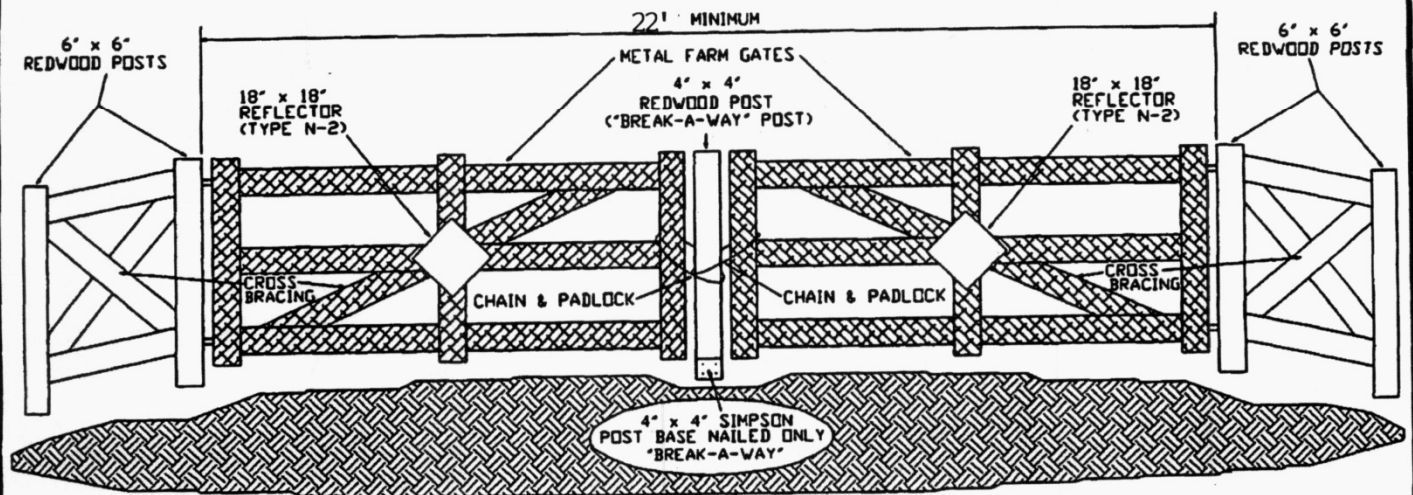
1. Culvert size to be established by a licensed Engineer.
2. Culverts should have a minimum depth of 24" of cover or an amount equal to $1/2$ of the diameter of the culvert, whichever is greater.
3. Contact the Shasta County Building Division to determine whether a grading permit is required.
4. Contact the California Department of Fish and Game prior to grading within creeks and drainages.

STATE OF CALIFORNIA
COUNTY OF SHASTA
FIRE DEPARTMENT

TYPICAL VERTICAL CURVES

FOR PRIVATE RESIDENTIAL
DRIVEWAYS

Fig. FS-5



- *** NOTES: 1) All exposed surfaces to be painted with 2 coats of white exterior grade paint.
- 2) Set all posts in 3' of concrete.
- 3) 2 SEPARATE CHAINS AND PADLOCKS,
ONE SET FOR EACH GATE

STATE OF CALIFORNIA
COUNTY OF SHASTA
FIRE DEPARTMENT

BREAK-A-WAY
GATE ASSEMBLY

Fig. FS-6

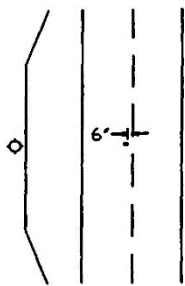


FIGURE 1
TWO LANE STREET

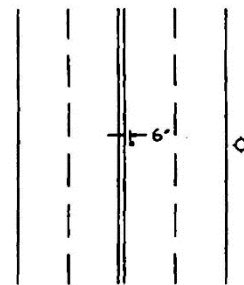


FIGURE 2
MULTI-LANE STREET

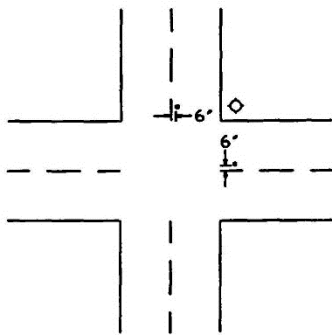


FIGURE 3
AN INTERSECTION

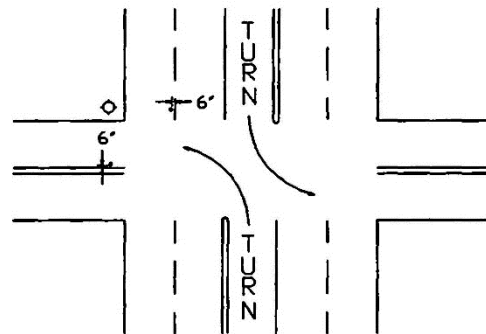


FIGURE 4
FOUR LANE STREET WITH
TURN LANE AT INTERSECTION

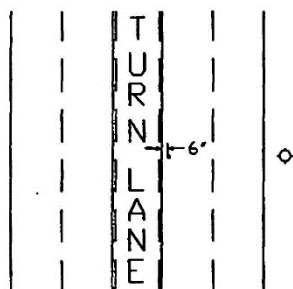


FIGURE 5
MULTI-LANE STREET
WITH TURN LANE

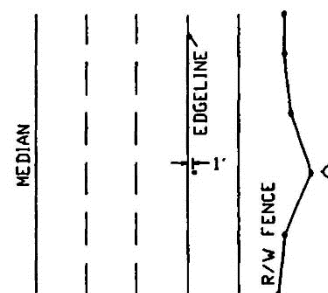


FIGURE 6
FREEWAYS AND EXPRESSWAYS

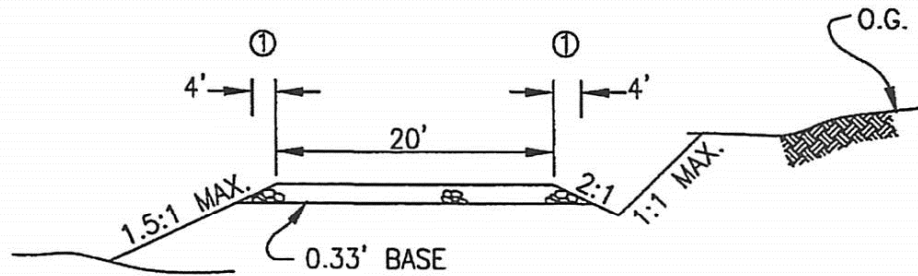
- ◊ = FIRE HYDRANT
- = BLUE PAVEMENT MARKER

NOTE: REFLECTIVE SURFACE OF
BLUE DOT TO FACE
DIRECTION OF VEHICLE
TRAVEL

STATE OF CALIFORNIA
COUNTY OF SHASTA
FIRE DEPARTMENT

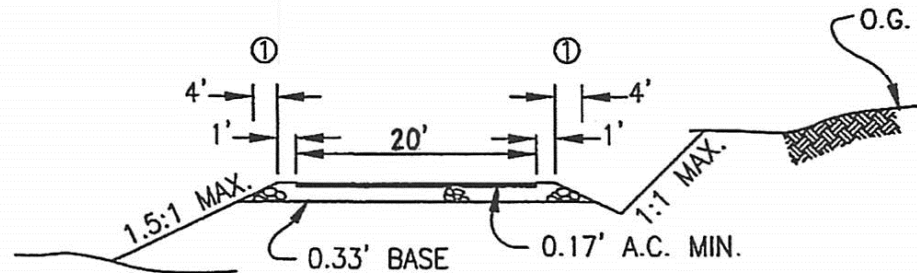
TYPICAL
HYDRANT MARKER
LOCATION

Fig. FS-7



PRD EMERGENCY FIRE ESCAPE ROAD

- ① VEGETATION CLEAR ZONE, REMOVE VEGETATION SMALLER THAN 6-INCH IN DIAMETER A MINIMUM OF 4 FEET BEYOND THE EDGE OF ROAD



PAVED EMERGENCY FIRE ESCAPE ROAD

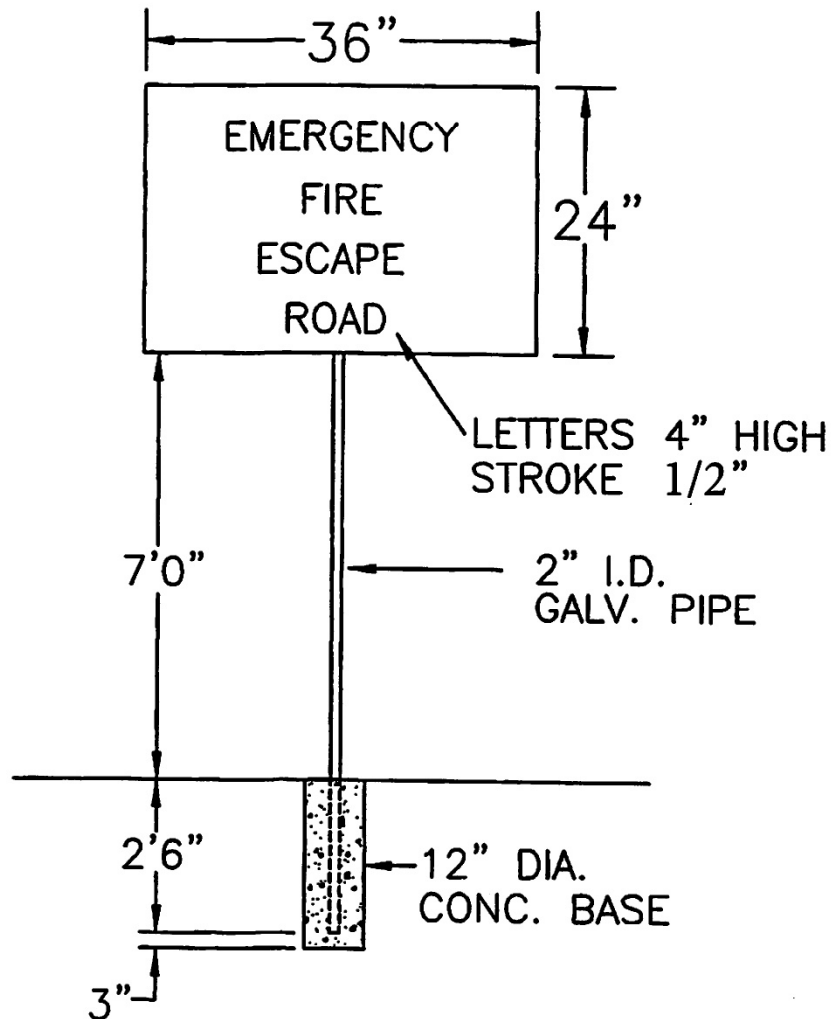
- ① VEGETATION CLEAR ZONE, REMOVE VEGETATION SMALLER THAN 6-INCH IN DIAMETER A MINIMUM OF 4 FEET BEYOND THE EDGE OF ROAD

TYPICAL SECTIONS

SCALE: NTS | DATE: 08-2004 | SHASTA COUNTY DEPARTMENT OF PUBLIC WORKS

TYPICAL SECTIONS FOR EMERGENCY FIRE ESCAPE ROAD

FS-8



REFLECTIVE WHITE LETTERS ON
REFLECTIVE GREEN BACKGROUND

SCALE: NTS

DATE: 01-2003

SHASTA COUNTY DEPARTMENT OF PUBLIC WORKS

SIGN

FOR EMERGENCY FIRE ESCAPE ROAD

FS-9