

TAHOE DOUGLAS FIRE PROTECTION DISTRICT

Department of Fire Prevention

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fireprevention@tahoefire.com
www.zephyrfiresafe.org



193 Elks Point Road
P.O. Box 919
Zephyr Cove, NV
89448

Fire Code Guidance

This document is designed to assist those planning projects within the Tahoe Douglas Fire Protection District. The intent is to provide an overview of design and construction requirements for projects within the Fire District. Specific details and actual requirements may be found within the adopted codes and standards. The applicant is also encouraged to consult the Douglas County Code and the Douglas County Design Criteria and Improvement Standards.

The Department of Fire Prevention is located within the Round Hill Fire Station (Station #3). Front office hours: M-F 8:00 AM – 12:00 PM, 1:00 PM – 5:00 PM

Physical Address: 193 Elks Point Rd.
Zephyr Cove, NV 89448

Mailing Address: P.O. Box 919
Zephyr Cove, NV 89448

Phone: 775-588-3591

Fire Marshal Mark Novak 775-588-3591 ext. 8
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Codes in effect:

2006 International Fire Code (IFC) (as adopted by Douglas County Code)
2006 International Building Code (IBC) (as adopted by Douglas County Code)
2006 International Residential Code (IRC) (as adopted by Douglas County Code)
2006 Uniform Mechanical Code (UMC) (as adopted by Douglas County Code)
2006 Uniform Plumbing Code (UPC) (as adopted by Douglas County Code)
2005 National Electric Code (NEC) (as adopted by Douglas County Code)

The revisions to these codes can be found in the Douglas County Code, Chapter 20, Appendix B: <http://dcnvda.org/userpages/CountyCodes.aspx>

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The Nevada State Fire Marshal's Code is contained within NRS 477 and NAC 477. These may be found at <http://www.leg.state.nv.us/Law1.cfm>

Tahoe Douglas Fire District Sprinkler Ordinance:

901.8.3 Habitable space is defined for the purpose of this section as the total floor area in square feet for all floor levels within the exterior walls. Addition means to add additional habitable square footage to an existing structure. Ord. 1237, 2008; Ord. 1131, 2005; Ord. 802, 1998; Ord. 711, 1995; Ord. 641, 1994; Ord. 491, 1989; Ord. 437, 1985)

901.8.4. All new buildings or structures within the jurisdiction of the Tahoe-Douglas Fire Protection District must be provided with automatic fire sprinkler system as outlined in Chapter 9, Section 903.3 of the adopted edition of the International Fire and Building Codes, except for single family dwellings (R-3 and U occupancy) with less than 3,600 square feet of habitable space that meet fire flow requirements of the International Fire Code. (Ord. 1237, 2008; Ord. 1211, 2007; Ord. 1131, 2005; Ord. 802, 1998; Ord. 711, 1995; Ord. 641, 1994; Ord. 573, 1992; Ord. 543, 1991; Ord. 517, 1990)

901.8.5. All existing buildings or structures within the jurisdiction of the Tahoe-Douglas Fire Protection District must be provided with an automatic fire sprinkler system as outlined in Chapter 9, Section 903.3 of the adopted edition of the International Fire and Building Codes, when changing use or when increasing the habitable space of a single family dwelling to more than 3,600 square feet. (Ord. 1237, 2008; Ord. 1211, 2007; Ord. 1131, 2005; Ord. 802, 1998; Ord. 711, 1995; Ord. 641, 1994; Ord. 573, 1992; Ord. 543, 1991; Ord. 517, 1990)

901.8.6. No other exceptions to the requirement of sections 901.8.4 and 901.8.5 will be permitted except by an affirmative majority vote of the board of appeals or the board of county commissioners. To grant an exemption the board of appeals must either: (i) require the buildings of structures to have an alternative extinguishing system, or (ii) require an acceptable alternative method of providing fire protection which will provide additional safety for occupants, better access for the fire department and other improved fire safety conditions when the board makes the finding that the exemption is based on low risk to life safety and property value. No exemption is allowed by the board unless the building or structure meets the minimum requirements of the current adopted edition of the International Fire and Building Code. (Ord. 1237, 2008; Ord. 1211, 2007; Ord. 1131, 2005; Ord. 802, 1998; Ord. 711, 1995; Ord. 641, 1994; Ord. 517, 1990)

901.8.7. Installation, inspection, maintenance and testing of sprinkler systems or any alternative extinguishing system approved pursuant to section 901.8.6 must meet the requirements as set forth in the current edition of the NFPA standard for the installation of sprinkler systems, NFPA 13, 13D, or 13R, as applicable. (Ord. 1131, 2005; Ord. 802,

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1998; Ord. 711, 1995; Ord. 641, 1994; Ord. 517, 1990)

901.8.8 Total building area is defined for the purpose of this section as the total floor area in square feet for all floor levels within the exterior walls, or under the horizontal projection of the roof of a building. (Ord. 1131, 2005; Ord. 802, 1998; Ord. 711, 1995; Ord. 641, 1994; Ord. 573, 1992; Ord. 543, 1991; Ord. 517, 1990)

Tahoe Douglas Fire District Roofing and Siding Ordinance:

Title 20, Appendix B, Section 1507.8 shall read as follows:

1507.8 Class A roofing and siding materials required in Tahoe Douglas Fire Protection District.

- 1. All new roofs in the Tahoe Douglas Fire Protection District must have Class "A" material applied. Wood shingles and wood shakes fire retardant treated or non-treated are not allowed, shall not be allowed as an alternative material and shall not be installed or used on any new construction, reroofing, repairs, or siding of any structure. (Ord. 1211, 2007; Ord. 1131, 2005; Ord. 1112, 2005)*
- 2. Repairs and reroofing involving less than 25% of the roof area shall be exempt from the requirements of subsection 1, but Class 'B' Fire Retardant treated material must be used. This exception is allowed only once per structure.*
- 3. Fire retardant treated wood shingles and wood shake siding shall not be applied to the exterior surface of a structure within 8 feet of the adjacent ground level, and fire retardant treated wood shingle and wood shake siding material may not exceed 10% of the total area of the structure side. Fire retardant treated wood shingles and wood shake siding must be rated at Class 'B' or higher. Wood shingle and wood shake siding currently on a structure shall only be repaired with Class 'B' or higher rated materials.*

Please note that this ordinance requires roofs to have a "stand alone" class A rating, class A by assembly is not permitted.

In addition to materials that have been tested and listed as Class A, the following are considered to be Class A: brick, masonry, slate, clay or concrete roof tiles, exposed concrete roof deck, ferrous or copper shingles or sheets. Ferrous or copper shingles or sheets must have the minimum thickness prescribed by the IBC to be considered Class A. Please note that aluminum is not considered Class A "stand alone" unless tested and listed as such.

If the profile allows a space between the copper roof covering and the decking then the open space need to be firestopped or have an underlayment of nonperforated 72 pound cap sheet that has been tested in an assembly for a class A rating (ASTM E-108).

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Plan Submittal Process

Effective January 1, 2011 intake of plans requiring review by the Tahoe Douglas Fire Protection District will be processed at the Round Hill Fire Station (Station #3) 193 Elks Point Rd. Zephyr Cove, NV.

The following types of review are conducted by the Tahoe Douglas Fire District:

- 1) Level I: also known as a Pre-TRPA review.
This review evaluates adequacy of defensible space, revegetation plans and fire department access. Review of roofing and siding materials can be incorporated in this phase. Submittal should include site plan showing location of trees and brush, access roads/driveways, and elevations. The use of standardized defensible space instruction blocks is highly encouraged. See www.zephyrfiresafe.org for more information. **No Fee**
- 2) Level II: Pre-building permit – single family dwellings and sfd additions.
This review includes a review of roofing and siding if not reviewed during Level I review as well as smoke alarm placement within residences. Submittal should include site plan, elevations showing roofing and siding materials and electrical plan showing placement of smoke alarms. Instruction block should be included specifying smoke alarm installation requirements for both flat and pitched ceilings as applicable. **No Fee**
- 3) Level III: Fire Protection Systems, commercial projects including multi-family dwellings and tenant improvements. Submittal should include site plan, elevations, floor plans, pitched ceiling should include reflected ceiling plan if a fire sprinkler system is required or present. Supporting documents such as hydraulic calculations and cut sheets shall accompany submittals as necessary. **Fee charged** according to TDFPD plan review fee schedule. This fee must be paid in full at the time of submittal.

The Fire District will retain a set of plans for all submittals.

Detailed information on specific requirements for projects within the Tahoe Douglas Fire Protection District are contained within the Fire District's Construction and Development Guide, this guide is available at the Round Hill Fire Station or online at www.zephyrfiresafe.org

The Fire District makes every effort to review plans in an expedient manner, however the project proponent should plan on a turnaround time of 10 business days.

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Plan Submittal Requirements – General

Two (2) complete sets of specifications when applicable.

A. Completed plan review application.

B. Plan review fees made payable to the “Tahoe Douglas Fire Protection District”.

C. ARCHITECTS – NRS 623: Plans, specifications, reports and other documents issued by a Nevada registered architect or residential designer for office use must be signed, sealed and dated on the title page by the architect or designer.

D. CONTRACTORS - NRS 624: A Nevada licensed contractor may prepare and submit plans in his license discipline. The plans shall be prepared by or under the supervision of the contractor and include his signature and license number.

E. ENGINEERS - NRS 625: Nevada registered engineers are required to seal or stamp submitted documents and over sign the seal with a wet signature and date.

NOTE: Incomplete information or submittal may result in rejection or suspension of review process. Only individuals identified in C, D and E may submit plans for review.

Plan Submittal Requirements Pre –TRPA :

The following guidelines are to be used for all submittals to the Fire District for the Defensible Space Landscape plans and Fire Department Access Plans for Fire District pre-approval of building permits before they are submitted to TRPA. **All information for Defensible Space and Fire Department Access can be combined onto the same sheet.**

Defensible Space-

- Minimum 18” X 24” sheet
- No larger than 2’ contour lines
- All current and proposed structures on the property must be indicated
- All property boundaries must be indicated
- Scale indicated
- North indicated
- Trees and vegetation taller than 3’ must be indicated, trees should specify size in DBH.
- Individual plants or brush fields 20 square feet or larger in area must be indicated
- Drip lines of trees should be indicated

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- Roads and driveways in and abutting the property must be indicated
- List of common names of existing and proposed vegetation within 30' of the structure.
- Height of proposed structure
- The use of combustible mulches as a blanket groundcover is not permissible.

Fire Department Access-

- Minimum 18" X 24" sheet
- No larger than 2' contour lines
- All current and proposed structures on the property must be indicated
- All property boundaries must be indicated
- Scale indicated
- North indicated
- All roads and driveways in and abutting the property must be indicated
- Roads and driveways inside the property boundaries must indicate slope
- Any current or proposed fire hydrants on the property must be indicated.

Plan Submittal Requirements – Sprinkler Systems

- Type of system
- Common scale
- Plot plan, illustrates fire protection water mains and pipe diameter supplying building
- The location of smoke or fire partitions, fire walls and building elevation views.
- Occupancy class and use of each room or area
- Full height cross sectional drawing including ceiling construction
- Reflected ceiling plan if ceiling is pitched or there are ceiling pockets
- Total area protected by each system for each floor
- Dimensions for system piping, sprinkler spacing, branch line spacing and elevation changes
- Equipment legend and north orientation arrow
- Hydraulic calculations, include type of sprinklers, K factor,
- Dry system capacity
- Location of exterior water flow alarm
- Backflow prevention device data is provided
- Type of antifreeze, concentration and total volume
- Evidence that riser is located in heated environment
- If CPVC pipe is used, evidence that antifreeze and insulation is compatible with piping.
- Electrical plan showing location of ceiling fans and light fixtures

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- Location of FDC (note residential systems using a pump/tank water supply must be provided with an FDC).

Plan Submittal Requirements – Alarm Systems

- Provide common scale
- Provide equipment symbol legend
- Indicate the type of fire alarm circuit
- Provide specification sheets for all devices/equipment
- Detail wiring for alarm initiating and alarm signaling devices is detailed, type and gauge of conductors
- Specify location of FACP
- Show device locations, mounting heights and building cross sectional details
Provide sectional views of structure, roof, ceiling and rooms with beams, solid joist or drop ceilings
- Provide riser diagram illustrating the number and type of devices installed on each circuit, fire alarm zones, primary and secondary power supplies
- Provide calculations for voltage drop and standby power requirements
- Indicate length of each circuit and resistance of wire

Plan Submittal Requirements – Kitchen Hood Suppression Systems

- Provide a common scale and equipment symbol legend
- Provide cross sectional view of room and equipment
- Indicate total number of nozzles and total flow, indicate permissible number of flow points
- System model is indicated, system is UL 300 listed
- Provide measurements of hood, plenum and duct
- Provide pipe size and length, including equivalent length for fittings
- Provide pipe configuration, indicate permissible number of fittings
- Show type, rating and location of detectors
- Show pipe bracing
- Identify type of nozzles used, permissible coverage and correct for hazard
- Show nozzle placement
- Show location of manual pull station
- Show duct and plenum protection
- Provide specification of control head and shut off valves.

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Fire Apparatus Access

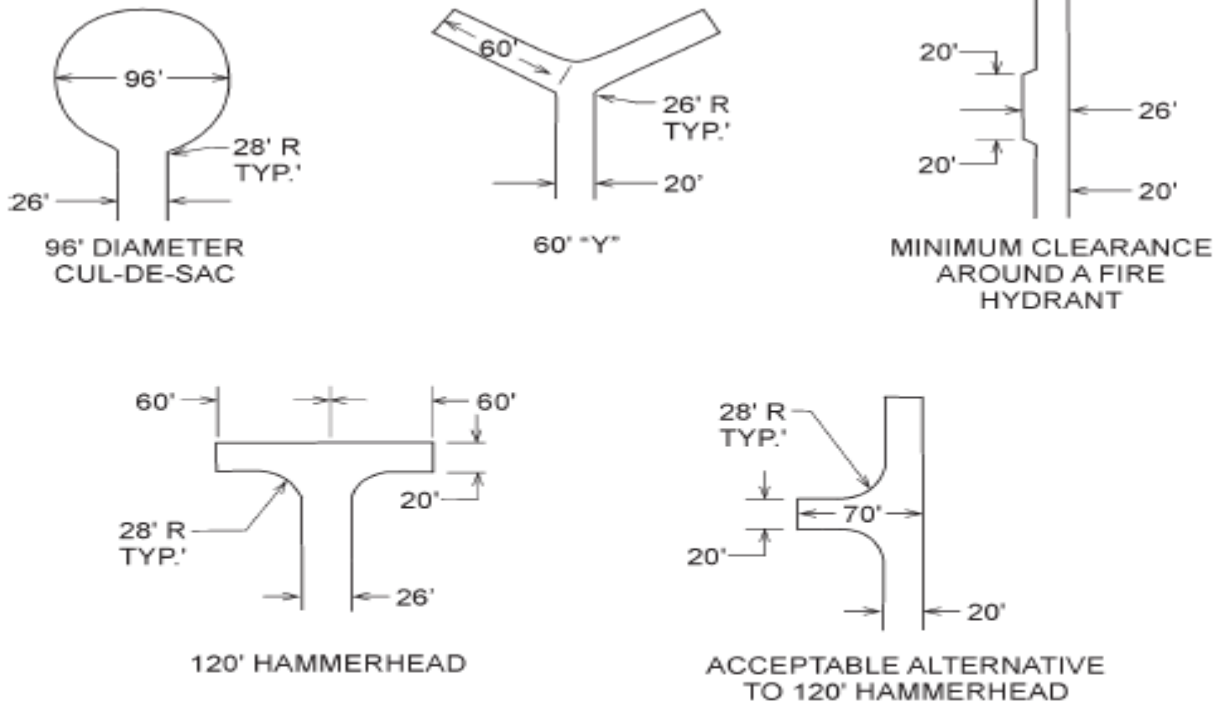
Fire department access shall comply with IFC Section 503 and Douglas County Code. 12' driveway may be approved in lieu of a fire department access road when the driveway an R-3. The use of a 12' driveway in lieu of a Fire Department Access Road is subject to the approval of the Fire Marshal and is based upon site specific conditions.

Fire Department Access roads shall meet the following criteria:

- Maximum grade 12%, grade may exceed 12% but not greater than 15% for a maximum distance of 300 feet in any 2000 feet of street length (DCC 20.100.090 (O)(2)(c)).
- Fire Department Access Roads shall extend to within 150' of all portions of the exterior walls of the structure.
- Fire Department Access Roads shall be a minimum of 20' wide (Douglas County Code may require greater width in some areas) and have an unobstructed vertical clearance of 13'6". Greater width may be required adjacent to a fire hydrant and in areas adjacent to buildings that require fire department aerial apparatus access.
- Fire Department Access Roads shall have an all-weather surface and be designed to carry the load imposed by fire department apparatus (40,000 lbs, 80,000 lbs for aerial apparatus).
- Dead end Fire Department Access road exceeding 150' shall be provided with an approved turnaround and turnouts.

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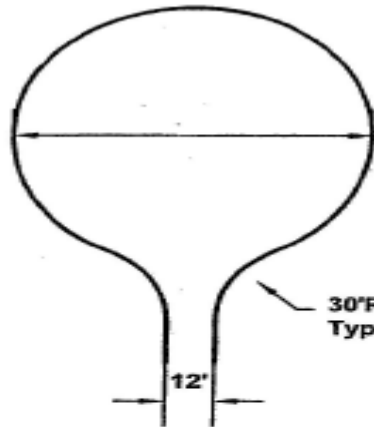
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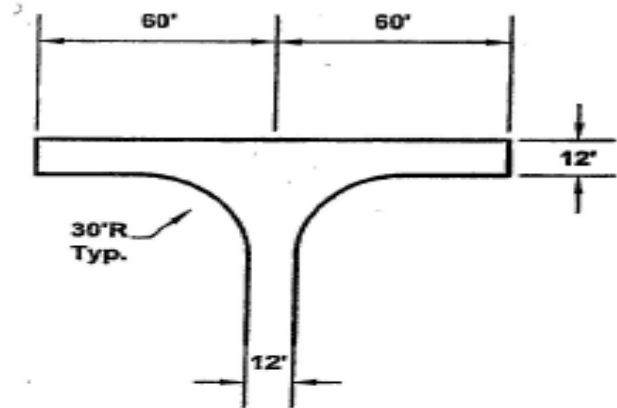
**FIGURE D103.1
DEAD-END FIRE APPARATUS ACCESS ROAD TURNAROUND**

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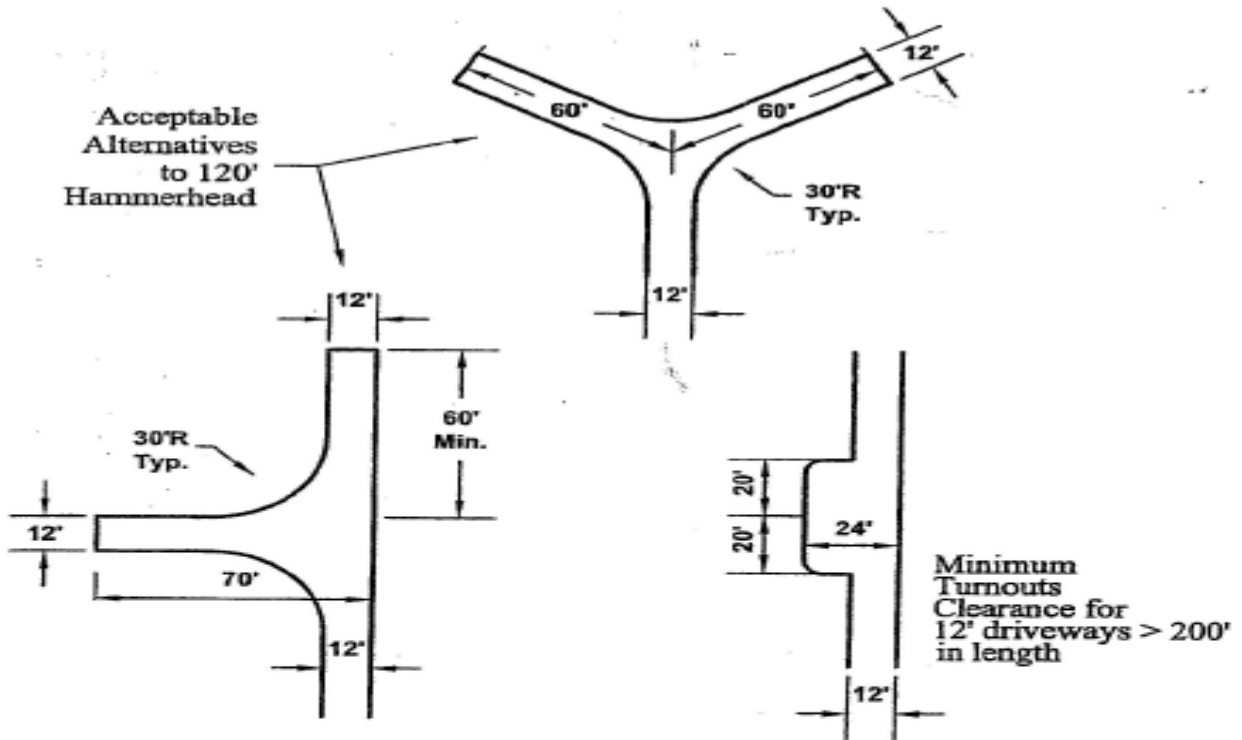


Diameter Turn Around



Hammerhead

Acceptable
Alternatives
to 120'
Hammerhead



12' Driveway

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Gates:

Automatic Gate Requirements

- All gates across driveways and access roads shall be approved by the Fire Chief.
- All gates must be provided with a “Knox key switch” which will open the gate.



- Gates serving more than five structures shall be provided with a strobe light activation system that is compatible with the Fire District's pre-emptor system.
- The clear opening of the gate must be 2' wider (one foot on either side) than the required driveway or road width. This width shall be maintained to a height of 13' 6".
- The gate shall be designed to operate in all weather conditions and shall be designed so that the operation cannot be impaired by snow/ice.
- The gate shall be designed to automatically open and remain in the open position in the event of a power failure.
- The gate shall be capable of being opened manually. Instructions on activating this feature shall be provided to the Fire District.
- The property owner shall provide documentation to the Fire District in which the owner agrees to maintain the gate in operable condition, the owner shall also agree to lock the gate in the open position should the gate become inoperable
- The property owner shall provide documentation to the Fire District in which the property owner agrees to indemnify the Fire District from:
 - any damages to the gate arising from Fire District operation
 - any loss or damage arising from any delayed emergency services
 - the property owner shall also acknowledge responsibility for any damage to Fire District property arising from the use of the gate.

This documentation shall be recorded with the parcel.

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Manually operated gates which are locked shall be provided with a Knox Padlock (see Knox Box section for ordering instructions)



Knox Box System

A key box is required for all commercial and multi-family occupancies. A single key box may serve multiple occupancies within the same complex provided that:

- the key box is adequately sized to accommodate the keys to all of the occupancies
- all individual keys are labeled
- the key box is located such that it is within a reasonable distance to all of the occupancies

Placement of the key box shall be approved by the Fire District prior to installation.

The only approved key box for fire department access is the Knox Box. A Knox Box can be ordered online at www.knoxbox.com . To place an order, mouse over “online purchase” (upper right hand corner of website), click on the product you wish to purchase, enter the zip code of the occupancy, click “continue”, check the circle next to Tahoe Douglas FPD, click continue, then follow the instructions online. It is very important that you select the Tahoe Douglas FPD, as a security measure, Knox Box keys are unique to each jurisdiction.

Please note that the Knox FDC caps and plugs are not currently approved for use within the Tahoe Douglas Fire District.

The installation of Knox Box at residences is also recommended, especially for vacation homes, homes with alarm systems and homes with fire sprinkler systems.



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FDC Caps

To prevent vandalism to fire department connections, the Fire District recommends the use of the Fail Safe FDC cap. All Fire District suppression apparatus carry the fail safe cap tool. Occupancies having found to have caps missing or with a history of FDC damage may be required to install the Fail Safe cap (IFC 912.3.1)



Fire Hydrants

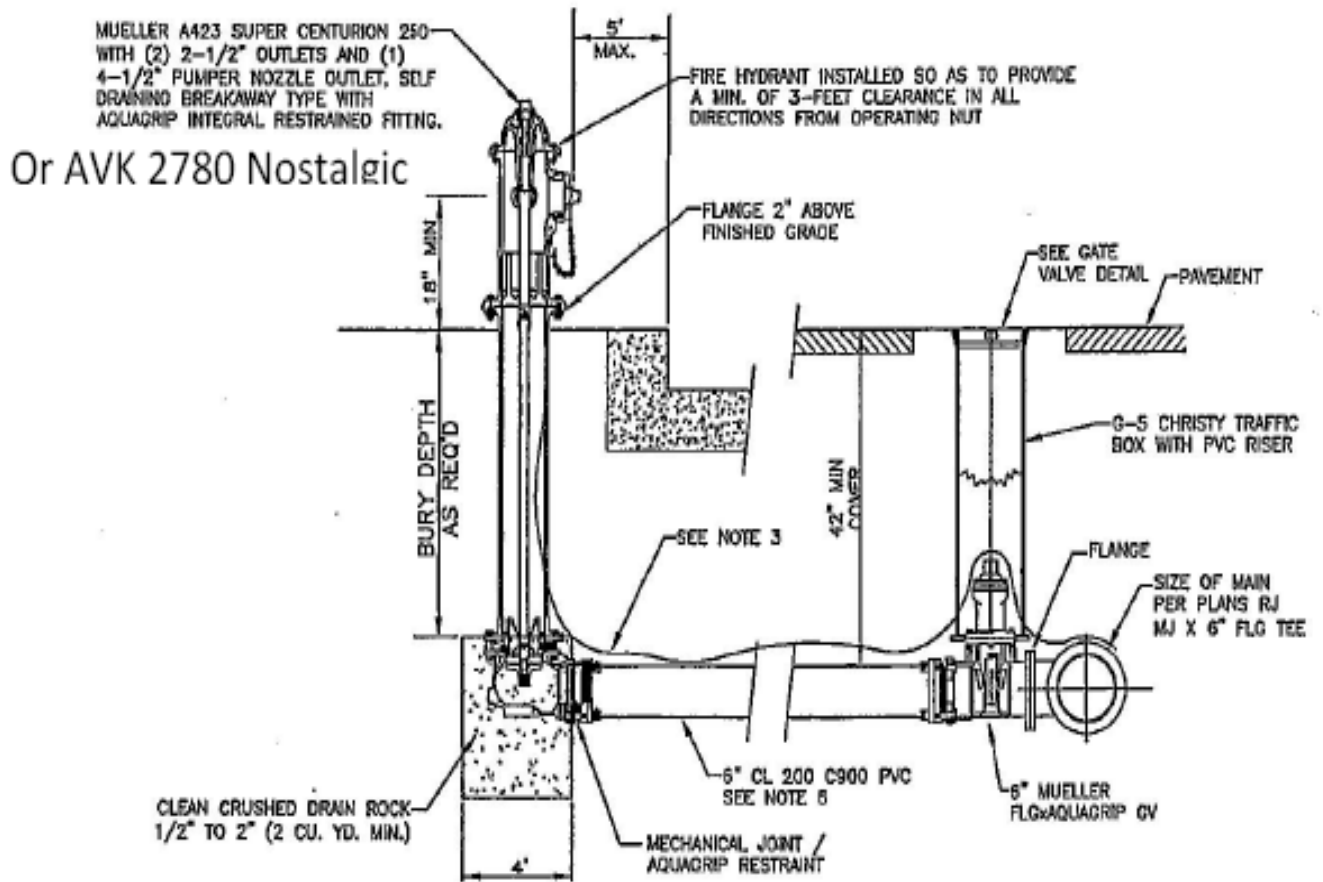
The location and installation of fire hydrants shall be approved by the Fire District. The Following fire hydrants are approved for installation within the Fire District:

- 1) Mueller A423 (super centurion)
- 2) AVK 2780 Nostalgic

The detail below can be used for installation of either hydrant:

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GENERAL NOTES:

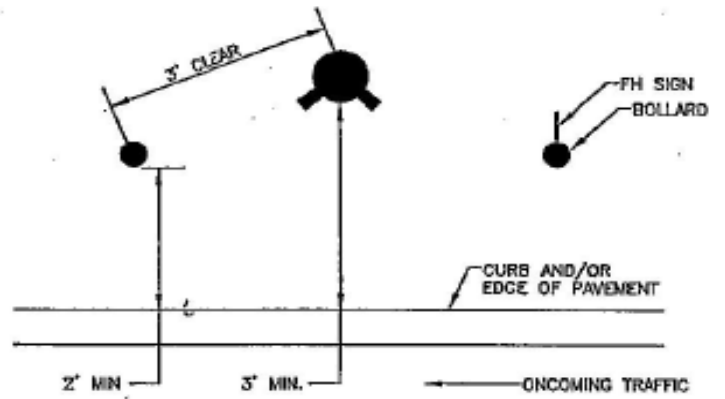
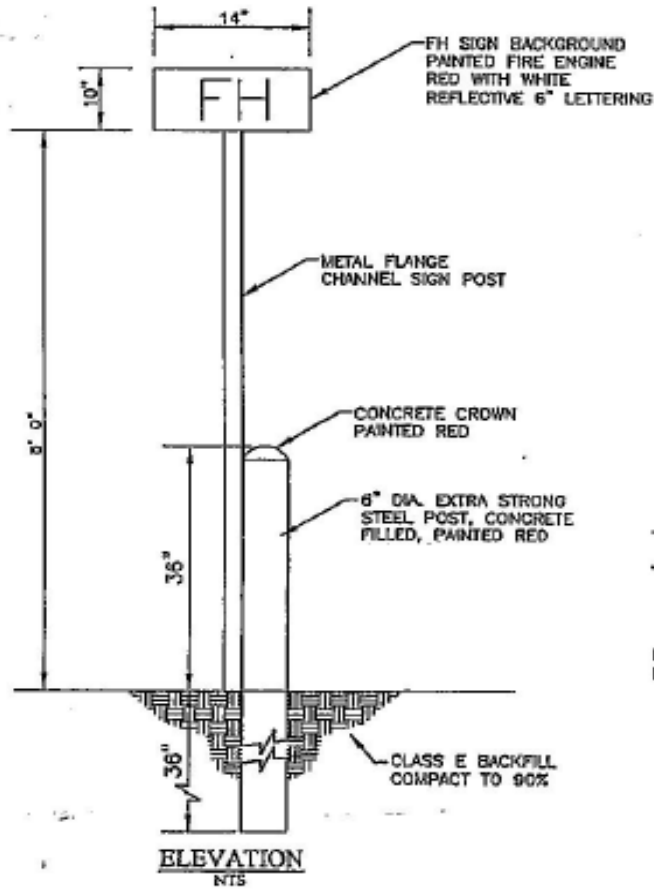
1. HYDRANT COLOR SHALL BE FACTORY PAINTED RED.
2. OPERATING NUT SHALL BE 1-1/2" PENTAGON,
3. 12 GAUGE COATED SOLID COPPER WIRE CONNECT TO MAIN AND LOOP AROUND HYDRANT ABOVE FLANGE, 2 TIMES.
4. INSPECTION BY DISTRICT SHALL BE REQUIRED PRIOR TO BACKFILLING.
5. NO FENCE SHALL BE ALLOWED WITHIN 3' OF ANY PORTION OF A FIRE HYDRANT.
6. ONE SECTION OF PVC PIPE SHALL BE USED IF HYDRANT IS LESS THAN 20 FEET FROM GATE VALVE. IF GREATER THAN 20 FEET, RESTRAIN BELL AND SUPPORT AND SPIGOT JOINT WITH EBAA SERIES 1800 RESTRAINER OR APPROVED EQUAL.
7. HYDRANT SHALL HAVE (2) 2-1/2" HOSE NOZZLES AND (1) W/4-1/2" STEAMER NOZZLE. ALL THREADS SHALL BE AS SPECIFIED FOR NATIONAL STANDARD HOSE COUPLING.
8. HYDRANT BARREL SHALL BE 5-1/4".
9. IF TREE ROOT SYSTEMS ARE ENCOUNTERED DURING FIRE HYDRANT INSTALLATION, A PROFESSIONAL ARBORIST SHALL BE ONSITE TO PRUNE THE ROOT SYSTEM AFTER THE EXCAVATIONS HAVE TAKEN PLACE AND BEFORE THE TRENCHES ARE RESTORED.

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NOTE: 4 1/2" STEAMER NOZZLE SHALL FACE THE STREET.
HYDRANT SHALL BE 1' MIN. BEHIND BOLLARD.

PLAN
NTS

BOLLARD AND FIRE HYDRANT SIGN

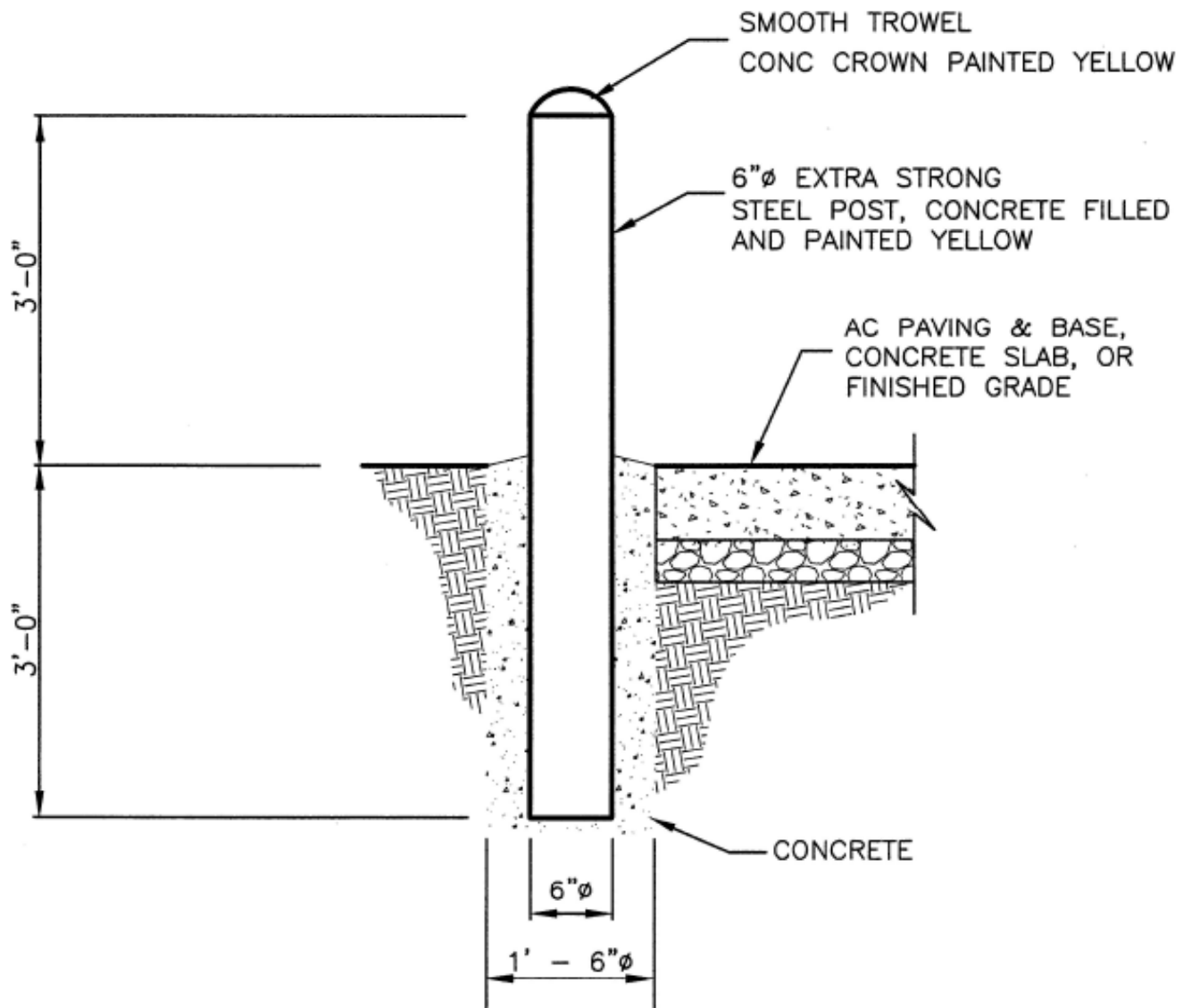
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Bollards

FDCs and gas meters subject to vehicular damage shall be provided with vehicle impact protection. Such protection shall comply with either IFC 312.2 or 312.3. If posts (bollards) are used, they shall be spaced no more than 4' apart and not less than 3' from the protected object.



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Operational Permits

The following types of activities will require an Operational Permit:

- Carnivals and Fairs
- Cutting and Welding (hot work)
- Exhibits and trade shows
- Explosives
- Use of a fire hydrant
- Use and storage of flammable and combustible liquids (in excess of amounts necessary for routing maintenance)
- Hazardous materials storage (in excess of amounts in table 105.6.20 of the IFC)
- High piled storage exceeding 500 square feet.
- Fueled vehicles or equipment inside assembly areas.
- Open Burning
- Open flames and torches in hazardous fire area
- Open flames and candles in assembly areas, dining areas or drinking establishments.
- Places of Public Assembly (new assembly areas, use of existing assembly occupancies beyond normal activities, use of decorative materials, etc.).
- Pyrotechnic special effects, including fireworks
- Temporary membrane structures, tents, and canopies.

An operational permit may be applied for in person at the Round Hill Fire Station or the permit request may be downloaded at www.zephyrfiresafe.org . There is no fee for an operational permit. Permit requests should be submitted at least fifteen business days prior to the activity requiring the permit.