

EL DORADO HILLS FIRE DEPARTMENT FIRE PROTECTION STANDARD



Construction of Residential Buildings

STANDARD #R-001 EFFECTIVE 8-18-2022 REVISED 8-22-22

SCOPE

The purpose of this standard is to communicate the minimum fire and life safety requirements for the construction of residential developments. This standard shall apply to the following:

1. Construction of a new one- and two-family dwelling, accessory dwelling unit, residential accessory structure and/or siting of a newly installed manufactured home.
2. Addition to a one- and two-family dwelling, manufactured home, accessory dwelling unit, and/or residential accessory structure.

DEFINITIONS

All-weather surface – A roadway and/or driveway surface that can bear the weight of fire apparatus. $\geq 12\%$ grade, an all-weather surface shall be a non-skid surface of either hot mix asphalt, asphalt concrete, or Portland cement concrete. $\geq 16\%$ grade, an all-weather surface shall be of either Type II slurry seal installed in accordance with ASTM D-3910 or a broom finished concrete seal installed in accordance with ASTM C-309.

Driveway – A vehicular access that serves up to two (2) parcels with no more than two (2) residential units and any number of non-commercial or industrial buildings on each parcel.

Fire apparatus access road – A road that provides fire apparatus access from a fire station to a facility, building, or portion thereof. This is a general term inclusive of all other terms such as fire lane, driveway, public street, private street, parking lot lane and access roadway.

SPECIFICATIONS

Fire Apparatus Access Roads

1. Fire apparatus access roads shall be provided to within 150-ft of all portions of the structure. (CFC §503.1.1)
2. Fire apparatus access roads shall have an unobstructed width of not less than 20-feet and an unobstructed vertical height of 15-feet. (CFC §503.2.1)

Exception: Driveways shall not be less than 12-feet in width.

3. Fire apparatus access roads shall be designed and maintained to support the imposed live load of 75,000 pounds. A report, prepared by a geotechnical or civil engineer, verifying the ability of the road to bear the required minimum weight shall be submitted with any plan indicating the construction of fire apparatus access roads. Verification of constructed roadway shall be provided by a geotechnical or civil engineer prior to the final of the project. (CFC §503.2.3)

Exception: Driveways shall be designed to support no less than 40,000 pounds.

4. Fire apparatus access roads shall have an all-weather surface as defined in this standard. (CFC §503.2.3)
5. Fire apparatus access roads shall not exceed 20% grade. (CFC §503.2.7)
6. Turns in fire apparatus access roads shall have a minimum 40-foot inner and 56-foot outer turning radius. (CFC§ 503.2.4)
7. Fire apparatus access roads more than 150-feet in length shall have an approved turnaround. (CFC §503.2.5)
8. Fire apparatus access roads serving residential structures located within State Responsibility Areas (SRA) and more than 150-feet in length shall have an approved turnout. Turnouts shall be a minimum 10-foot in width and 30-feet in length with minimum 25-foot tapered ends. (Title 14 §1273)
9. Approach and departure angles in fire apparatus access roads shall not exceed 5% over a distance of 5-feet. (CFC §503.2.8)

Water Supply

1. Fire flow shall be provided in accordance with CFC Appendix B, as amended. A letter from the El Dorado Irrigation District (EID) verifying their ability to provide the required fire flow, dated within the last 12 months, shall be provided prior to plan approval. (CFC §507)
2. Residential structures located in areas without public water infrastructure shall meet Fire Prevention Standard #D-003, NFPA 1142, and be provided with water

supply in the form of a tank, pool, reservoir, or pond as indicated in Table A. (CFC 507)

Table A

Residential Building Square Footage	Minimum Firefighting Water Supply <u>WITH</u> Fire Sprinklers	Draft Hydrant Outlet Size²	Minimum Firefighting Water Supply <u>WITHOUT</u> Fire Sprinklers	Draft Hydrant Outlet Size²
< = 1,200 sf	2,500 gallons	4.5"	2,500 gallons	4.5"
1,201 - 2,500 sf	2,500 gallons	4.5"	5,000 gallons	4.5"
2,501 - 5,000 sf	5,000 gallons	4.5"	10,000 gallons ¹	4.5"
5,001 - 7,500 sf	7,500 gallons ¹	4.5"	15,000 gallons ¹	4.5"
7,501 - 10,000 sf	10,000 gallons ¹	4.5"	20,000 gallons ¹	4.5"
10,001 - 12,500 sf	12,500 gallons ¹	4.5"	25,000 gallons ¹	4.5"
12,501 - 15,000 sf	15,000 gallons ¹	4.5"	30,000 gallons ¹	4.5"
15,001 - 17,500 sf	17,500 gallons ¹	4.5"	35,000 gallons ¹	4.5"
17,501 - 20,000 sf	20,000 gallons ¹	4.5"	40,000 gallons ¹	4.5"

* Water supply for larger structures, other than the ones listed above, shall be determined by the AHJ and shall be designed in 2,500-gallon increments.

*Structures with exposures, as defined by NFPA 1142, shall require a minimum 3,000 gallons of water

*Water supplies from a pool or pond-type source shall maintain a minimum of 2 feet above the strainer/connection point in addition to the required firefighting water supply (gallons).

¹ = A permit may be required from El Dorado County for tanks larger than 5,000 gallons

² = A 4.5-inch draft hydrant outlet requires minimum 4-inch supply piping from the tank to the 4.5-inch male national hose thread (NH) draft hydrant outlet assembly and shall include a 4.5-inch female to 2.5-inch male national hose thread (NH) reducer w/ cap.

PLAN SUBMITTAL

The following items will be required to complete the review of a new or modified one-or two-family dwelling, manufactured home, and/or residential accessory structure:

1. New residential building plan

This plan shall illustrate the location of all structures located on the parcel, location of property lines, location of fire hydrants, and driveway profile. This plan shall include the number of stories and square feet of the structure (inclusive of roof overhangs, covered porches, and patios). This plan shall also include the location of the required 30-foot fire safe setbacks for residential structures located within the SRA.

2. Fire flow letter

3. Set back exemption request letter

Applies to structures encroaching the SRA required setback only. This request letter states the conditions (i.e., site topography) driving the request for exemption.

4. Set back compliance plan

Applies to structures encroaching the SRA required fire safe setback only. This plan shall illustrate the location of all structures located on the parcel, location of property lines, and location of required setbacks. This plan shall also illustrate the fire protection features to be installed (i.e., decks, soffits, windows, doors, skylights, vents, etc.), inclusive of the manufacturer's specifications, and the specific setback conditions required based upon structure location.

5. Water supply and draft hydrant plan

Applies to structures without adequate public water infrastructure only. This plan illustrates the water supply storage arrangement and includes all pipe, fire hydrants, hose connections, and all appurtenances to be installed.

6. Water Use Agreement

Applies to structures without adequate public water infrastructure only. This agreement shall permit the use of the water supply by the responding fire agency and shall be recorded with the El Dorado County Recorder's office (see attachment A).

7. Liquified propane gas (LPG) tank

Applies to structures supplied with LPG. This plan shall illustrate the size of the tank, location of the tank, location of property lines, tank support, tank shut off valves, and tank electrical current protection (i.e., anode bags) (applies to underground tanks only).

INSPECTIONS

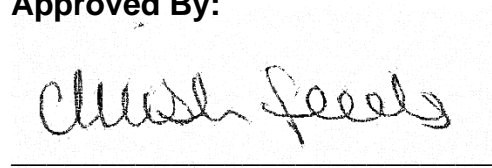
The following inspections may be required for the construction of or addition to a new one- and two-family dwelling, accessory dwelling unit, residential accessory structure and/or siting of a newly installed manufactured home:

1. Fire sprinkler underground pipe visual and hydrostatic test
2. Fire sprinkler overhead pipe visual and hydrostatic test
3. Fire sprinkler final
4. Water supply tank and draft hydrant visual and hydrostatic test
5. Liquified propane gas (LPG) tank, if applicable
6. Fire Final - inspection of fire apparatus access/driveway, review of geotechnical report (if applicable), address, fire safe setback (if applicable), vegetation, etc.

AUTHORITY CITED

1. California Fire Code (CFC)
2. California Code of Regulations, Title 14, Fire Safe Regulations SRA
3. National Fire Protection Agency (NFPA) 1142, Standard on Water Supplies for Suburban and Rural Firefighting

Approved By:

A handwritten signature in black ink, appearing to read "Chrishana Fields", is written over a light gray rectangular background.

Chrishana Fields, Fire Marshal

ATTACHMENT A

Recording requesting by:

El Dorado Hills Fire Department

When recorded mail a copy to:

El Dorado Hills Fire Department

1050 Wilson Blvd.

El Dorado Hills, CA 95762

Recorder's Use Only

El Dorado Hills Fire Dept. (Rescue Fire Dept.) / District Private Fire Protection Water Use Agreement

Date: _____

Property Address: _____

El Dorado County Assessor Parcel Number: _____

Owner: _____

This Private Fire Protection Water Use Agreement (Agreement) is entered this ____ day of ____ 20__ by and between the Rescue Fire Protection District, or the El Dorado Hills County Water District (Fire Department) on behalf of the Rescue Fire Protection District, and the Owner identified above to memorialize and set forth the terms and conditions upon which a private fire protection system water supply shall be maintained by Owner upon Owner's property such that construction and occupancy of structures may be allowed upon the Property. The Agreement shall be recorded against Owner's property and shall be binding upon all successors and assigns of Owner and upon any subsequent owner(s) of the Property.

Recitals

The purpose of this agreement is to describe the terms and conditions related to the use of a private fire protection water supply system on a private residential property which exists or shall be installed to address the lack of an available municipal water supply system within the allowable limits of the Property and the required fire flow and fire hydrant specifications as required by California Code of Regulations Title 24, Part 9, (Fire Code), §507 (Fire Protection Water Supplies). The Fire Protection System shall be installed in accordance with the plans and specifications set forth and approved on the design plans dated ____ and on record at the Fire Department for the specified property address above. The system shall be maintained in accordance with the specifications set forth and approved in the current version of Fire Protection Standard D-003 "Water Supplies for Suburban and Rural Firefighting" and with such additional maintenance standards as the Fire Department establishes from time to time, including any upgrade to meet changed circumstances or amendments to applicable Fire Codes. It is understood by

the Owner(s) and the Fire Department, hereafter known as "Parties" to this agreement, that the following terms and conditions are applicable for the use of a fire protection water supply source in lieu of providing an approved municipal water supply for the premise:

1. Neither party is permitted to terminate this agreement without the expressed written consent of both parties.
2. Neither this agreement nor any right or duty in whole or in part by the owner(s) under the agreement will be assigned, delegated or subcontracted without the written consent of the owner(s).
3. Owners agree to install, inspect and maintain the fire protection water supply system on the property in lieu of a municipal water supply as specified by current Fire Department regulations and standards on this subject as attached herein.
4. The water use agreement shall remain in effect in perpetuity, shall be binding upon successors and shall serve as a deed restriction upon the Property, unless and until parties agree to terminate this Agreement and cause it to be removed from the public record in a writing duly executed by each party.
5. Any and all debris that is created by and during the establishment of the fire protection water supply site will be disposed of by the owner(s)/contractor(s) to the satisfaction of the Fire Department.
6. The owner(s) will maintain the area covered by this agreement in a safe condition at all times, to the satisfaction of the Fire Department. This maintenance will include the groundskeeping around the site. This includes a minimum of 30' foot clearance of vegetation and combustible debris at all times from the fire protection water tank and related appurtenances.
7. The owner(s) agree(s) to save, keep harmless, defend, and indemnify the fire department and all its officers, employees, and agents, against any and all liability, claims, losses, and costs of whatever kind and nature, for injury and death of any person or persons, and for loss or damage to any property occurring in connection with or in any way incidental to or arising out of the occupancy, use, service, operation, or performance of work in connection with this agreement.
8. It shall be understood and agreed upon that the owner of the fire protection water system shall perform necessary ongoing inspections, testing, maintenance and repairs to the system to assure the proper performance of the system as it was designed and installed. Upon completion and approval of a system or certified 5-year inspection, a permit shall be issued by the Fire Department/District for the water supply and draft hydrant system and shall be good for 5 years. At 5-year intervals, the property owner shall

renew the permit by retaining a qualified approved vendor to perform a water supply system inspection to ensure operability of the firefighting water supply system during emergency incidents. The inspection report shall be provided to the fire department for review and approval.

9. This fire protection water use agreement shall be recorded with the El Dorado County Recorder's Office against the parcel where the water supply system is installed, and a copy provided to the AHJ prior to the final approval of the installation of the water supply system.
10. Impairments or discrepancies from the original design and installation of the fire protection water supply system shall be reported immediately to the fire department by the owner(s) or their designee.
11. The owner(s) grant the rights to the Fire Department/District and all mutual aid agencies to enter the property for the express purpose as stated by this agreement.

(Owner - Signature)

(Owner - Signature)

(Owner - Print Name)

(Owner - Print Name)

(Date)

(Date)

(El Dorado Hills / Rescue Fire Dept. /Dist. Official)

(Print Name)

(Title)

(Date)

PLANS: Fire protection system plans/specifications as approved for the subject property address and on record at the Fire Department.

STANDARD D-003: Fire protection maintenance, repair and inspection standards for private water supply and fire hydrant system at the subject property address and on record at the Fire Department.

ACKNOWLEDGMENT

A notary public or other officer completing this certificate verifies only the identity of the individual who signed the document to which this certificate is attached, and not the truthfulness, accuracy, or validity of that document.

State of California

County of _____)

On _____ before me, _____
(insert name and title of the officer)

personally appeared _____,
who proved to me on the basis of satisfactory evidence to be the person(s) whose name(s) is/are
subscribed to the within instrument and acknowledged to me that he/she/they executed the same in
his/her/their authorized capacity(ies), and that by his/her/their signature(s) on the instrument the
person(s), or the entity upon behalf of which the person(s) acted, executed the instrument.

I certify under PENALTY OF PERJURY under the laws of the State of California that the foregoing
paragraph is true and correct.

WITNESS my hand and official seal.

Signature _____ (Seal)