

EL DORADO COUNTY REGIONAL FIRE PROTECTION STANDARD



Water Supplies for Suburban and Rural Fire Fighting STANDARD #D-003 EFFECTIVE – 3/24/2021 REVISED – 3/23/2022

I. PURPOSE:

The purpose of this standard is to communicate the minimum level of water storage and delivery system requirements for one- and two-family dwellings as approved under the reduced fire flow allowance within the fire jurisdictions that adopt this standard.

II. BACKGROUND:

The California Fire Code (CFC) Section 507.1 requires an approved water supply capable of providing the required fire flow for fire protection to premises upon which facilities, buildings, or portions of buildings which are hereinafter constructed or moved into or within the jurisdiction. The CFC Section 507.2 further explains that the water supply shall consist of reservoirs, pressure tanks, elevated tanks, water mains or other fixed systems capable of providing the required fire flow. The CFC, as amended locally, requires the minimum fire flow for residential one- and two-family dwellings to be 1,000 gallons per minute for a 1-hour duration for dwellings 3,600 square feet or smaller. For dwellings 3,601 square feet or greater, the minimum fire flow is 1,000 gallons per minute for a 2-hour duration. The CFC grants the fire code official the authority to reduce the fire flow requirements for buildings in rural areas where the development of full fire flow requirements is impractical.

III. SCOPE:

This standard identifies a method of determining the minimum requirements for alternative water supplies for structural firefighting purposes in areas where the Authority Having Jurisdiction (AHJ) determines that adequate and reliable water supply systems for firefighting purposes do not otherwise exist. The CFC Section B103.3 allows the AHJ to use NFPA 1142.

IV. WHERE REQUIRED:

An approved water supply capable of supplying the required fire flow for fire protection shall be provided to premises on which facilities, buildings, or portions of buildings are hereafter constructed or moved into or within the jurisdiction. *(Structural additions may require existing water supply systems to upgrade from 2.5" to 4" systems on a case-by-case basis as determined by the AHJ).*

EXEMPTIONS:

- A. New structures & additions where El Dorado County has determined that (1) **no** permit is required for construction, or (2) is exempt.
- B. New residential structures that serve the following uses: private garages, carports, sheds, and other similar “U” occupancies with a floor area of not more than 500 square feet.
- C. Agricultural Buildings as defined by this standard in **Section VI**.

V. AUTHORITY CITED:

- A. 2019 California Fire Code (CFC)
- B. 2017 Edition NFPA 1142, Water Supplies for Suburban and Rural Fire Fighting
- C. 2018 Edition NFPA 22, Water Tanks for Private Fire Protection
- D. 2016 Edition NFPA 24, Installation of Private Fire Service Mains and Their Appurtenances
- E. 2013 CA Edition NFPA 25, Inspection, Testing, and Maintenance of Water-Based Fire Protection Systems
- F. 2020 California Code of Regulations, Title 14, Fire Safe Regulations SRA

VI. DEFINITIONS:

- A. **Agricultural Building** – A structure designed and constructed to house farm implements, hay, grain, poultry, livestock, or other horticultural products. This structure shall not be a place for human habitation or a place of employment where agricultural products are processed, treated, or packaged, nor shall it be a place used by the public *[CBC Section 202]* and as further defined by the referenced section of El Dorado County Planning and Building Department website for an Inspection Exempt Agricultural Barn.
- B. **AHJ** – Authority Having Jurisdiction
- C. **Building** – Any structure utilized or intended for supporting or sheltering any occupancy. *[CFC Section 202]*
- D. **Domestic Water Supply** – Water that is used for domestic consumption, potable water, in-home use, landscaping, or livestock. *(Does not include fire sprinkler water or firefighting water supplies).*
- E. **Fire Flow** – The flow rate of a water supply measured at 20 pounds per square inch residual pressure that is available for firefighting. *[CFC Appendix B Section B102]*

- F. **Fire Flow Calculation Area** – The floor area, in square feet, used to determine the required fire flow. [CFC Appendix B Section B102]
- G. **Firefighting Water Supply** – Water supply that is dedicated to the use of the fire department for the suppression of any type of fire.
- H. **Fire Sprinkler Water Supply (Sprinkler Demand) – NFPA 13D** – Water supply required to meet the design flow rate of a residential automatic fire sprinkler system, designed and installed by a California licensed C-16 contractor, for a minimum ten-minute duration using a 2-head hydraulic calculation.
- I. **Turnout** – A turnout shall be a minimum of 10 feet wide, 30 feet long, and include 25-foot tapers on each side, and shall meet all-weather surface requirements to support a minimum of 40,000 lbs.
- J. **Water Purveyor** – A public utility, a mutual water company, a government agency or special district, or other entity owning and operating a water system and holding a valid permit from the California State Department of Public Health to purvey water.

VII. PERMITS AND OTHER CODES AND STANDARDS:

- A. A fire permit is required for construction of private fire hydrants and water supply systems built to these standards in accordance with Title 24 CCR § 105.7.19. Your project may be subject to additional requirements of the El Dorado County Building Department for permits and compliance with other applicable federal, state, or local codes. Plan submittal requirements are detailed in Section IX.A of this standard.

VIII. QUALIFICATIONS & LICENSES REQUIRED FOR INSTALLATION:

- A. Water supply system components for fire protection including well drilling, pumps, water storage tanks, and fire hydrant connections shall be laid out, fabricated, and installed by either a [1] Class A General Contractor or [2] a specialty contractor holding a California Well Drilling (C-57) license as defined in California Code of Regulations Title 16, Division 8, Article 3.
- B. Residential fire sprinkler system components from the water storage tank to the building shall be **designed**, fabricated, and installed by a specialty contractor holding a California Fire Protection Contractor (C-16) license, **or a California Plumbing Contractor (C-36) license** as defined in California Code of Regulations Title 16, Division 8, Article 3.

Exception: Residential water supply systems for fire protection and residential fire sprinkler system designed and installed in accordance with the owner-builder provisions of California Business and Professions Code Section 7026.12 (b). A signed copy of the Homeowner Exemption Letter shall be provided upon submission of plans to the fire department for review and approval.
[See **Attachment A** – Homeowner Exemption Letter]

IX. INSTALLATION REQUIREMENTS:

A. PLANS

1. Working plans shall be submitted for approval to the AHJ before any equipment is installed or remodeled. *[NFPA 24 Section 4.1.1]*
2. Working plans shall be drawn to an indicated scale or other approved layout of sheets on uniform size and shall include the following items that pertain to the design of the system: *[NFPA 24 Chapter 4 Section 4.1 Plans]*
 - a. Name of owner
 - b. Location, including street address and APN
 - c. Point of compass
 - d. Name and address of contractor
 - e. Plan view and elevation view of access roads and driveways, structures, tank size, and tank location
 - f. Size and location of all water supplies
 - g. Vegetation clearances around all system components shall be indicated on the plans
 - h. Private fire service main piping
 - a. Size, schedule, length, depth, and location of piping
 - b. Size, types, and locations of valves, valve indicators, regulators, meters, and valve pits
 - c. Method of restraint
 - i. Thrust Blocks, mechanical bolt restraints, undisturbed natural bedrock, or equivalent as approved by the AHJ.
 - i. Hydrants:
 - a. Size and location of draft hydrants, outlets, and gate valves.
 - b. Thread size and coupling adapter specifications that meet National Hose Thread Standards
 - c. Method of restraint
3. Submitted plans shall include the manufacturer's installation & specification sheets, including listings for the tank and all system components.
4. Contact your local fire agency for individual submittal detail.

B. INSTALLATION TIMELINE

An approved water supply for fire protection, either temporary or permanent, shall be made available as soon as combustible material for vertical construction arrives on the site. *[CFC Section 3312.1 & NFPA 1142 Section 7.1.2]*

Temporary water supplies that are accepted shall include: 1) Dedicated use for firefighting only, 2) are placed in a location approved by the AHJ, 3) contain a minimum of 2,500 gallons of water, 4)

include a minimum of one 2.5" NH fire department connection, and 5) have unobstructed fire apparatus access to the water supply and connection at all times as approved by the AHJ.

Exemption: Non-combustible structures are exempt from the temporary water supply only.

C. WATER USE AGREEMENT

The AHJ shall enter into a water use agreement **prior to the use of** a private water supply source **designed to** meet the requirements of this standard. [See **ATTACHMENT B** as an example]

D. APPROVED WATER SUPPLIES

1. Purveyor supplied hydrant system
2. Tanks
3. NFPA 1142 Annex B Optional methods approved by the AHJ
 - a. *A pool, reservoir, or pond may be used as a replacement for a tank system when in compliance with NFPA 1142, **Section IX.J – Draft Hydrants & Fire Valves** of this standard and approved by the AHJ.

E. TANK MATERIALS

1. Materials shall be limited to steel, concrete, and fiberglass reinforced plastic tanks or equivalent as approved by the AHJ. [NFPA 22 Chapter 4 Section 4.4]

F. TANK LOCATION

1. Water storage tanks shall be located a minimum of 30 feet from the closest combustible structure **and not within any recorded Public Utility Easements (PUE)**. Where this requirement is impractical an alternate means of protection may be required by the fire code official.
 - a. **Water tanks may be located within a structure so long as the structure is built to California Building Code Chapter 7A requirements, NFPA 22, and maintains a minimum of 3 feet of clearance around the tanks for maintenance and access needs. The structure shall also allow for access to the vents, lid, and filling ports or other access points for filling/refilling the tank.**
2. Combustible vegetation shall be maintained clear **within** 30 feet of an **aboveground tank** or to the property line.
3. Footings, foundation(s), or other supports shall be constructed to support soil grading adjacent to the tank shall be performed to prevent water run-off from eroding the foundation, footings, or support.
4. The ground under the tank shall be leveled and shall have compacted AB or concrete to support the imposed load.

G. TANK SIZE

1. Tank systems covered by this standard shall provide, at a minimum, the capacity of Firefighting Water Supply indicated in **Table A** of this standard based on the size of the structure to be protected and if the structure is protected with fire sprinklers. Additional water capacity may be added to the tank system to provide either residential automatic fire sprinkler water supply [See **Section IX.G.2** of this standard] and/or domestic water supply but shall require a backflow device to be installed between the firefighting water supply and the domestic water supply to prevent contamination of the domestic water supply. Systems that provide water for a combination of firefighting water supply and either automatic fire sprinkler water supply and/or domestic water supply shall be designed with either piping or automatic controls that ensure the firefighting water supply is always reserved for fire department use [See **Section IX.L** of this standard].
2. If additional water storage capacity is needed in the tank for automatic fire sprinkler system design, the tank size shall be increased 500 gallons minimum, or the amount specified by the Licensed California C-16 Contractor who designs and builds the sprinkler system per the NFPA 13D standard.
3. Commercial water supplies shall meet the fire flow requirements located in CFC Appendix B Table B105.1(2)

H. TANK VENTING

1. Tanks shall be provided with a vent above the maximum water level. Tank vents shall have a cross-sectional area greater than or equal to one and one-half times (1.5x) the area of the draft hydrant supply pipe.
2. Tank vents shall be provided with a screened inlet configured to prevent the impairment of the vent or tank intrusion by birds, mammals, insects, or debris.
3. Tank vents shall be installed above the potential snow level for the site elevation. Approval required by the AHJ.

I. PIPING

1. Tank piping attachments for fill, venting, supply, overflow, or drain shall meet the requirements of the tank manufacturer.
2. All supply piping shall be designed and installed to provide a minimum flow rate as shown in **Table A** of this standard. [NFPA 1142 Table 4.6.1]
3. All piping and fittings shall be a minimum of Schedule 40, unless otherwise required by the AHJ.

4. Flexible piping, which accounts for tank expansion and movement, shall be installed where specific tank manufacturer's installation specifications require.
5. Piping **used in filling the tank** shall be a minimum of ¾ inch pipe.
6. The tank outlet, supplying the draft hydrant piping, shall include a control valve and shall be a minimum 4-inch inside diameter.
7. The draft hydrant supply piping shall be a minimum 4-inch inside diameter.
8. All piping shall be coated, **insulated and/or** wrapped to prevent corrosion, **freezing and/or** weathering **where required**.
9. All underground piping shall be placed on 6 inches of sand or other fill material approved for underground utilities and covered 6 inches minimum with the same material prior to backfill.
10. Underground piping shall be buried 24 inches below finished grade unless it is routed under roads or driveways in which case it shall be buried 36 inches minimum below finished grade.
11. All underground piping shall have a blue tracer wire/**detectable tape** buried with the pipe.
12. All piping risers shall be supported by a concrete pad no less than 24" x 24" x 4" and shall have bracing added for additional support when required by the AHJ.
13. **An air-bleed valve may be required to be installed in a location to remove air from the system. When required, it shall be readily accessible for use and maintenance.**

J. DRAFT HYDRANTS & FIRE VALVES

1. **When required by the AHJ, a fire valve of an indicating type shall be installed at the draft hydrant location, auto-fill line, and/or at the connection point to the tank, to allow isolation of the supply piping for repairs.**
2. The draft hydrant location shall be located no closer than **100 feet [NFPA 1142 §8.4.4]** and no further than 250 feet from protected structures as measured along the route of a road or driveway, **or other location approved by the AHJ.**
3. The center height of the draft hydrant outlet shall be a minimum of 18 to 24 inches above the finished grade and shall be marked by a blue reflector at the hydrant and street address.
4. Elevation of the draft hydrant outlet shall be at the same level or lower than the tank outlet.

Exception: Elevation of the draft hydrant outlet shall not be more than 10 feet above the tank outlet, if approved by the AHJ based on available topography limitations.

5. The draft hydrant outlet shall be a combination of 4½ inch and 2½ inch NST male hose thread adapters (also known as NH and NS). *[Title 14 1275.03]*
6. The male hose threaded outlet shall be provided with a lugged protective cap and breakable seal to ensure fire department use only.
7. The draft hydrant shall be visible and accessible with a minimum of 3-foot clearance in all directions clear to the road or turnout.
8. A turnout shall be required adjacent to the draft hydrant for the purposes of allowing a firefighting apparatus to connect to the hydrant without obstructing the driveway/roadway.
9. The draft hydrant shall be located 6 to 8 feet from the edge of the fire apparatus turnout, and in a location where fire apparatus using it will not block ingress/egress.
10. The draft hydrant shall be painted per the local fire department requirements. A permanent sign shall be attached to the draft hydrant or within 5 feet of the draft hydrant stating, “**NO PARKING - Drafting Fire Hydrant - ___ Gallons**”. Permanent lettering shall be 1½ inch minimum and shall be red in color on a white background. The sign shall not interfere with the operation of the draft hydrant.
11. A 3-foot clear space shall be maintained around the circumference of the draft hydrant. A reflective blue marker, with a minimum dimension of 3” inches, shall be located on the driveway address sign and within 3’ feet of the draft hydrant on a post or sign.
12. Dry draft hydrants shall be installed on projects where there is a potential snow level for the site elevation, as determined by the AHJ.

K. FREEZE PROTECTION

1. All aboveground water piping and water tanks shall be designed and installed to protect against freezing where required by the AHJ.

L. WATER LEVEL ASSURANCE

1. An approved method shall be used to provide automatic water fill to ensure the minimum required gallons as listed in **Table A** are always available.
2. The system shall be designed such that when the water supply source is impaired, the firefighting water supply will be reserved for firefighting only. The methods used to provide this assurance may include tank plumbing design/configuration and/or approved electric control systems.
3. A sight gauge shall be required as part of the water level assurance design. *[See Figure 4]*

X.

XI. INSPECTIONS/TESTING FOR NEW INSTALLATIONS (performed by the Fire Department):

A. Underground Inspections shall include:

- a. All underground piping shall be inspected prior to covering with fill.
- b. Verify correct tank size (*in gallons*), correct tank material, and correct tank location.
- c. Verify that approved piping, fittings, and appurtenances were installed.
- d. Verify appropriate piping restraints and freeze protection are installed.
- e. Verify appropriate depth of underground pipe.
- f. Verify tracer wire/**detectable tape** is installed along the entire length of the underground pipe.
- g. Verify hydrostatic test passes inspection. Piping shall be pressurized with water at a static pressure of 50 psi for 15 minutes from the tank valve to the draft hydrant/fire valve.
- h. There shall be no evidence of leaks.

B. Final Inspections shall include:

- a. Entire system shall be inspected prior to occupancy of the structure requiring the water supply.
- b. Verify all valves operate as designed.
- c. Verify auto-fill is functional by testing the float valve and subsequent water flow.
- d. Verify water level indicator is installed and functional.
- e. Verify tank venting is installed and is the correct size.
- f. Verify water flow through system and out of draft hydrants (*gravity systems*).
- g. Verify draft hydrant cap is installed.
- h. Verify No Parking – Drafting Fire Hydrant sign is installed.
- i. Verify blue marker at the street address and at draft hydrant are installed.
- j. Verify “Water Use Agreement” is signed and recorded.
- k. Add the draft hydrant and tank GPS locations to Active 911 (*if applicable*).

XII. ONGOING WATER STORAGE INSPECTION, TESTING, & MAINTAINANCE:

- A.** Owners of residential water systems, installed per the requirements of this standard, shall perform necessary ongoing maintenance and repairs to the system to assure the proper performance of the system as it was designed and installed. All inspections, testing, maintenance, and recordkeeping shall comply with all requirements per CA Edition NFPA 25-2013 Ch. 7 & 9.
- B.** Impairments to the fire protection water supply system shall be reported immediately to the fire department.
- C.** Vegetation and combustible debris (*i.e. leaves, pine needles, branches, etc.*) shall be kept at a minimum 30’ foot clearance from the fire water tank.
- D.** Upon completion and approval of a system or certified 5-year inspection, a permit shall be issued by the fire department 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 (*or the local fire agency, if service is offered*) 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.

- E. A water use agreement detailing the approved uses of the system and inspection/permit requirements shall be entered into with the property owner and the applicable fire district. This 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. The water use agreement shall remain in effect in perpetuity, unless the AHJ agrees to remove the deed restriction, and the obligation shall be transferred to all new property owners at the time of sale.

ATTACHMENT B

Recording requesting by:

El Dorado County Fire Protection District

When recorded mail a copy to:

El Dorado County Fire
P.O. Box 807
Camino, CA 95709

Recorder's

Use

Only

El Dorado County Fire. 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 El Dorado County Fire Protection District (the Fire Department) 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 El Dorado Hills 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 El Dorado County Fire 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 County Fire. /Dist. Official)

(Print Name)

(Title)

(Date)

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 El Dorado County fire.

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)



El Dorado County Regional Fire Protection Standard

WATER SUPPLIES FOR URBAN AND RURAL FIREFIGHTING

- FIGURE 1 -
Above Ground Tank

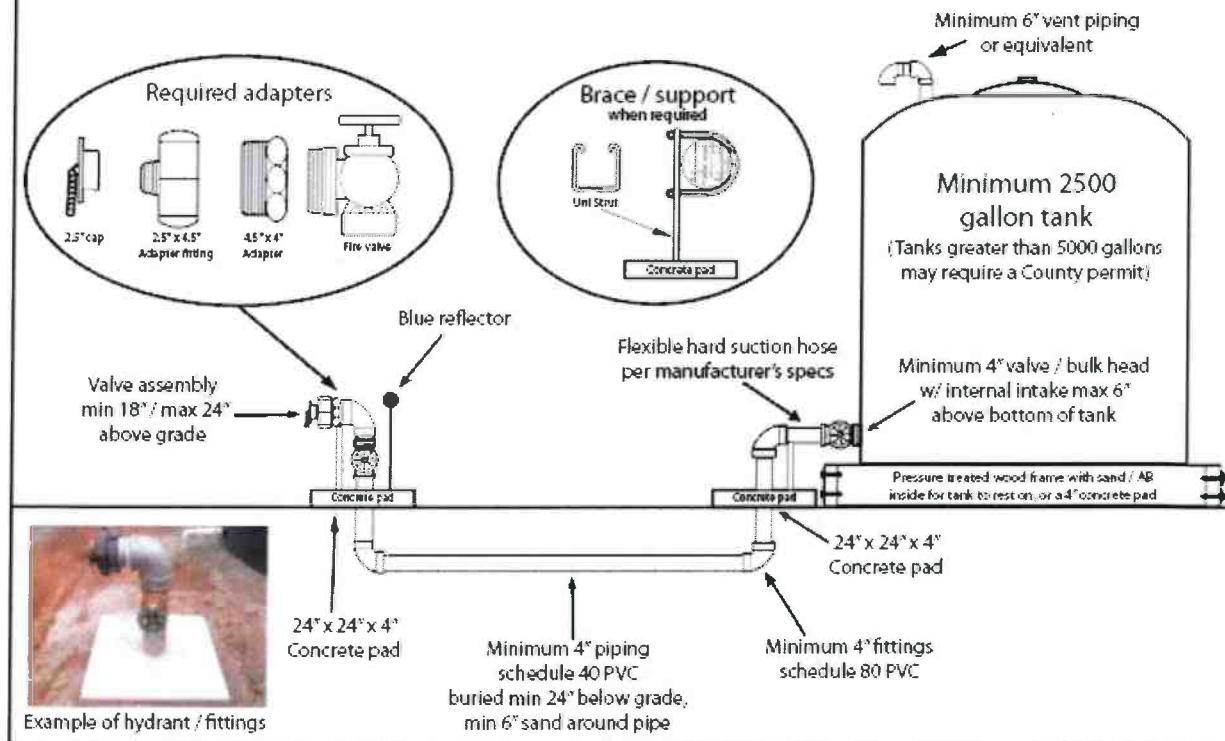
NOTE: All adapters shall be of brass, aluminum, or stainless steel national male hose thread.

PIPING MAY BE PVC OR CORROSION RESISTANT STEEL (MINIMUM 4") AND MUST BE SUPPORTED.

TANK MAY BE CONSTRUCTED OF CONCRETE, STEEL, PLASTIC, OR OTHER MATERIALS AS APPROVED AS COMPARABLE.

VALVE MUST BE LOCATED NO CLOSER THAN 50 FEET, NOR FARTHER THAN 250 FEET, FROM THE STRUCTURE IT SERVES AND MUST BE MARKED WITH A BLUE REFLECTOR.

EXAMPLE OF RISER SUPPORT, OTHER METHODS MAY BE USED WITH APPROVAL FROM THE AHJ.



Revised Date: 3/18/2021

Revised By: EDC FPO

EDC STD #D-003



El Dorado County Regional Fire Protection Standard

WATER SUPPLIES FOR URBAN AND RURAL FIREFIGHTING

- FIGURE 2 -
Underground Tank

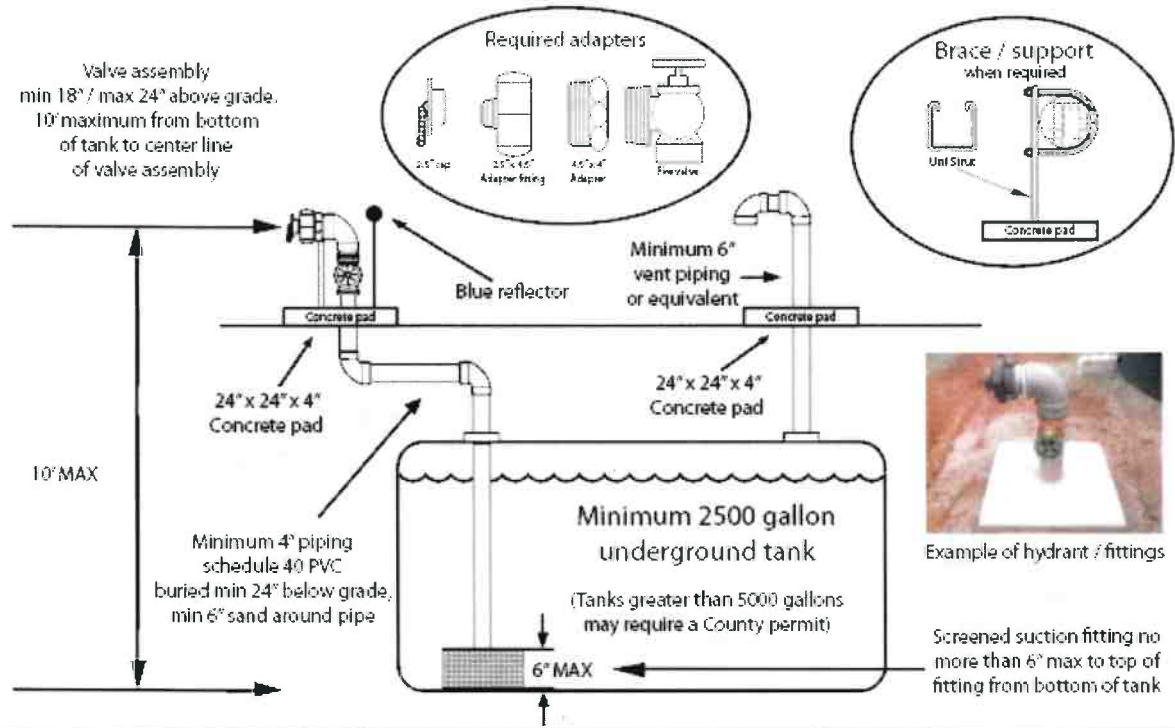
NOTE: All adapters shall be of brass, aluminum, or stainless steel national male hose thread.

PIPING MAY BE PVC OR CORROSION RESISTANT STEEL (MINIMUM 4") AND MUST BE SUPPORTED.

TANK MAY BE CONSTRUCTED OF CONCRETE, STEEL, PLASTIC, OR OTHER MATERIALS AS APPROVED AS COMPARABLE.

VALVE MUST BE LOCATED NO CLOSER THAN 50 FEET, NOR FARTHER THAN 250 FEET, FROM THE STRUCTURE IT SERVES AND MUST BE MARKED WITH A BLUE REFLECTOR.

EXAMPLE OF RISER SUPPORT, OTHER METHODS MAY BE USED WITH APPROVAL FROM THE AHJ.



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WATER SUPPLIES FOR URBAN AND RURAL FIREFIGHTING

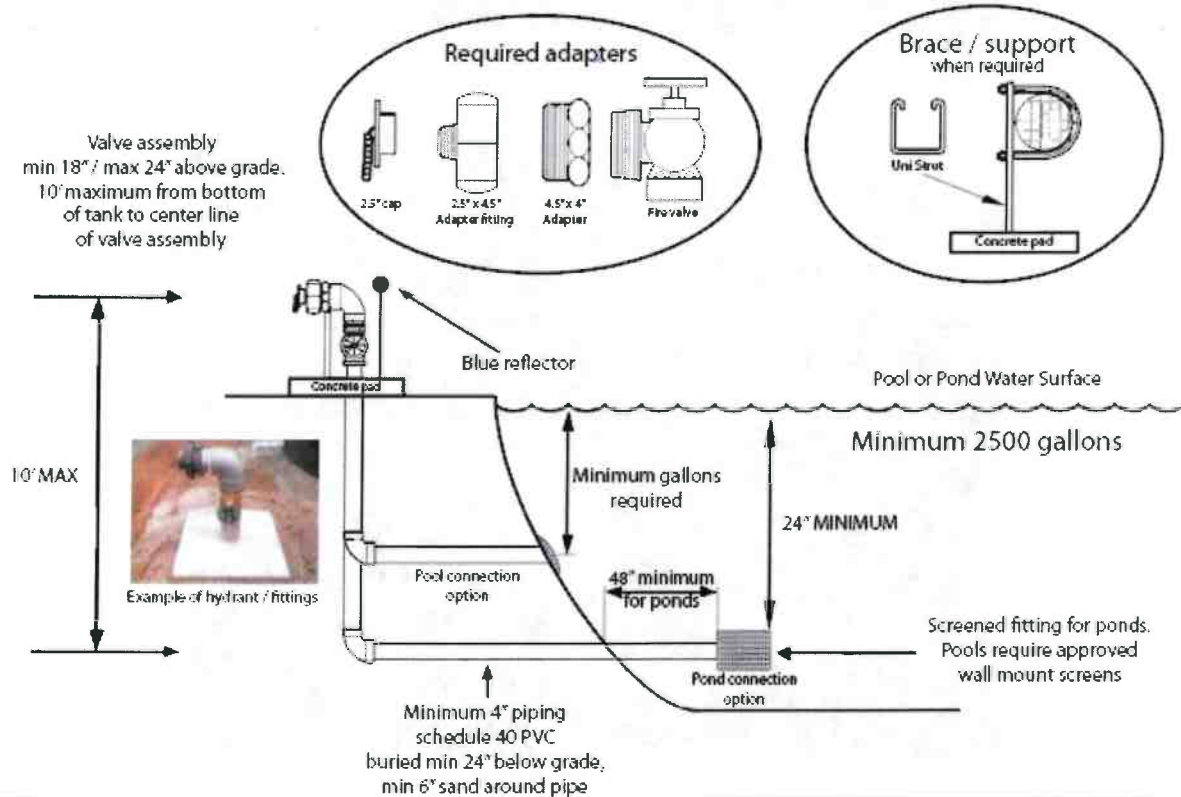
- FIGURE 3 -
Pond or Pool

NOTE: All adapters shall be of brass, aluminum, or stainless steel national male hose thread.

PIPING MAY BE PVC OR CORROSION RESISTANT STEEL (MINIMUM 4") AND MUST BE SUPPORTED.

VALVE MUST BE LOCATED NO CLOSER THAN 50 FEET, NOR FARTHER THAN 250 FEET, FROM THE STRUCTURE IT SERVES AND MUST BE MARKED WITH A BLUE REFLECTOR.

EXAMPLE OF RISER SUPPORT, OTHER METHODS MAY BE USED WITH APPROVAL FROM THE AHJ.



Revised Date: 3/18/2021

Revised By: EDC FPO

EDC STD #D-003

FIGURE 4

[EXAMPLE ONLY]



TABLE A

Residential Building Square Footage	Minimum Firefighting Water Supply <u>WITH</u> Fire Sprinklers	Draft Hydrant Outlet Size ²	Minimum Firefighting Water Supply <u>WITHOUT</u> Fire Sprinklers	Draft Hydrant Outlet Size ²
< = 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" draft hydrant outlet requires minimum 4" supply piping from the tank to the 4.5" male national hose thread (NH) draft hydrant outlet assembly and shall include a 4.5" female to 2.5" male national hose thread (NH) reducer w/ cap.

Approved By:



Fire Prevention personnel (fill in)



Fire Chief (fill in)

HOW TO DISTINGUISH CHANGES TO THIS STANDARD FROM PRIOR STANDARD PROVISIONS:

|| Indicates a new standard section has been added.

RED – indicates language changes have been made since the previous version of this standard.

ATTACHMENT A

Homeowner Exemption Letter

Date: _____

El Dorado County Building Permit #: _____

Project Address: _____

APN: _____

This water supply & draft hydrant system and/or residential fire sprinkler system will be designed and installed in accordance with the owner-builder provisions found in Section 7026.12 of the California Business and Professions Code. This code section states:

The design and installation of a fire protection system, excluding an electrical alarm system, shall be performed only by [1] a specialty contractor holding a California Fire Protection Contractor (C-16) license as defined in California Code of Regulations Title 16, Division 8, Article 3 or by [2] an owner-builder of an owner-occupied, single-family dwelling, if not more than two single-family dwellings on the same parcel are constructed within one year. The EDHFD retains authority to inspect and approve the design and installation prior to the issuance of a certificate of occupancy for the dwelling.

The water supply & draft hydrant system portion of the fire protection system listed above shall be installed by a [1] Class A General Contractor or [2] a specialty contractor holding a California Well Drillers (C-57) license (as defined in California Code of Regulations Title 16, Division 8, Article 3) or by [3] an owner-builder of an owner-occupied, single-family dwelling, if not more than two single-family dwellings on the same parcel are constructed within one year.

Nothing in this exemption shall be considered as abrogating the provisions of any ordinance, rule or regulation of any state or local agency related to the installation of a water supply & draft hydrant system and/or a residential fire sprinkler system.

Homeowner(s) Signature: _____

Homeowner(s) Printed Name: _____