



Chambers County Fire Marshal's Office **Fire Hydrant & Fire Water Requirements**



Fire Water Requirement:

Chambers County Fire Code and *International Fire Code*, 2018 Edition, require *approved* fire water supplies for fire protection (Section 507). The inability of a proposed occupancy to provide adequate water and distribution systems for fire protection, as deemed necessary by the *fire code official* according to the hazards associated with the occupancy, shall constitute grounds to deny the issuance of a permit (Chambers County Fire Code, Exhibit A, Sec. 507.1.1).

Fire Hydrants:

1. If you are in an area served by a water district or municipal services, fire hydrants are required if a 6" or larger main fronts any side of your property. In areas not served by a water district or municipal services, see the last section of this document, "**Fire Water Supplies in Undeveloped Areas**".
2. The maximum distance from a fire hydrant to a building is 400' per IFC 2018 507.5.1, with an allowable increase of up to 600' for a building with an automatic sprinkler system. This distance should be determined "as a hose would lay", and measured to the exterior portions of the building (perimeter of building). More than one hydrant may be necessary to meet this requirement.
3. Hydrants shall be located out of the collapse zone of a building (NFPA 24 2016 7.2.4).
4. Hydrants shall have unobstructed access (507.5.4). (ie., not blocked by fences, etc.)
5. A hydrant must be located within 100' from an FDC.
6. The use of a hydrant must not require the blocking of main driveways or access into the facility.

Fire Hydrant Spacing:

1. Annexes B and C of the IFC 2018 are not adopted by Chambers County.
2. Per *Chambers County Infrastructure Design Standards*, maximum fire hydrant spacing is 500 ft.

Fire Water Supplies in Undeveloped Areas

1. Projects in undeveloped areas not served by a water district or municipal services may require an alternative to provide water for fire protection. Fire code (507.1.1) allows the fire marshal to approve alternative means of fire water, utilize NFPA 1142, or require additional protective measures to meet this requirement.
2. Water storage tanks or ponds with dry hydrants or fire pumps may be utilized to satisfy this requirement.
3. Remote fire hose connections (dry standpipes) may be required to ensure adequate distribution.
4. The following types of occupancies will require alternative fire water supplies, and may consist of dry hydrants:
 - a. Buildings requiring an automatic sprinkler system (fire sprinklers);

- b. Buildings greater than 12,000sf in area;
 - c. A complex or facility with groups of buildings whose aggregate square footage exceeds 12,000sf.
 - d. Residential occupancies (single story apartments, hotels, etc.);
 - e. RV parks greater than 10 sites;
 - f. Any other occupancies for which the fire marshal determines necessary to protect life and/or property.
5. Due to the hazards and risks associated with the following types of occupancies, they may require pressurized fire water systems (tanks or ponds with fire pumps) and standard fire hydrants spaced according to code:
- a. Multi-story Residential buildings (apartments, hotels, etc.);
 - b. Institutional buildings (hospitals, nursing homes, assisted living facilities, residential board and care, etc.);
 - c. Hazardous storage occupancies (Group H).

*Remote fire hose connections, as approved by the fire marshal, may be utilized in conjunction with dry hydrants to meet the requirements of this section. Remote fire hose connection FDCs shall be labeled and adjacent to dry hydrants and discharge into a 2.5" male NST connection.

Dry Hydrant Design Criteria per NFPA 1142

1. As a minimum, Schedule 40 pipe and component fittings shall be used.
2. All dry hydrant systems shall be designed and constructed to provide a minimum flow of 1000 gpm (3800 L/min) at draft.
3. All exposed surfaces and all underground metal surfaces shall be protected to prevent deterioration.
4. Suction hose connection(s) shall be 6" Male NST and shall conform to NFPA 1963, *Standard for Fire Hose Connections*. The connection(s) shall include a protective cap. The cap and adapter shall be of materials that minimize rust and galvanic corrosion.
5. Dry hydrant system piping shall be supported and/or stabilized using approved engineering design practices. Stabilization or equivalent protection shall be employed at elbows and other system stress points.
6. All connections shall be clean, and the appropriate sealing materials shall be used according to manufacturer's specifications so as to ensure that all joints are airtight.
7. System strainers shall be constructed to permit required fire flow.

8. Adequate working space shall be provided around the dry hydrant to provide for a safe working environment.
9. Dry hydrants shall be located such that they are accessible under all weather conditions.
10. The dry hydrant system and access to the site shall be developed in a manner that allows the fire department pump to connect to the hydrant using not more than 20 ft (6 m) of hard suction hose.
11. Dry hydrants shall be located a minimum of 100 ft (30 m) from any structure.
12. No parking or other obstacles shall be allowed within 20 ft (6 m) of the access side of the hydrant.
13. Dry hydrants shall be protected from damage by vehicular and other perils, including freezing and damage from ice and other objects.
14. Dry hydrant locations shall be made visible from the main roadway during emergencies by reflective marking and signage approved by the AHJ.
15. There shall be not less than 2 ft (0.6 m) of water above the strainer and not less than 1 ft (0.3 m) below the strainer.

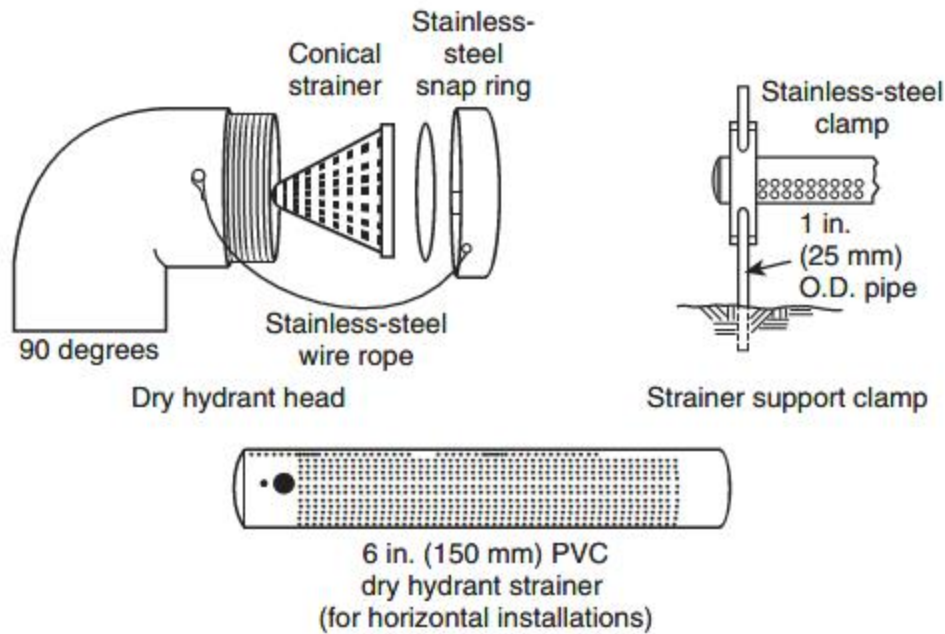


FIGURE A.8.3.2(a) Commercially Available Dry Hydrant Components.

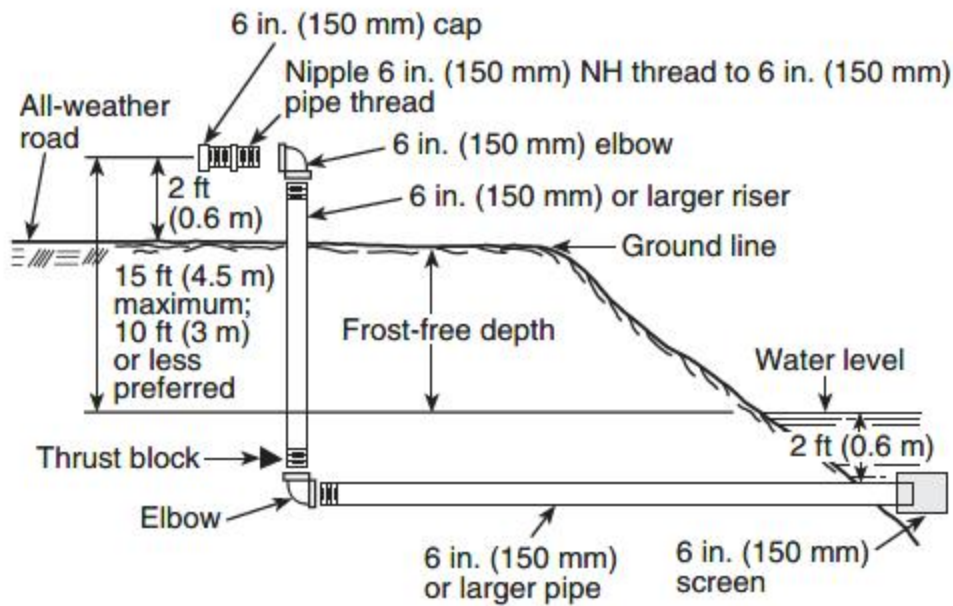


FIGURE A.8.3.2(b) Exploded View of Dry Hydrant Construction.

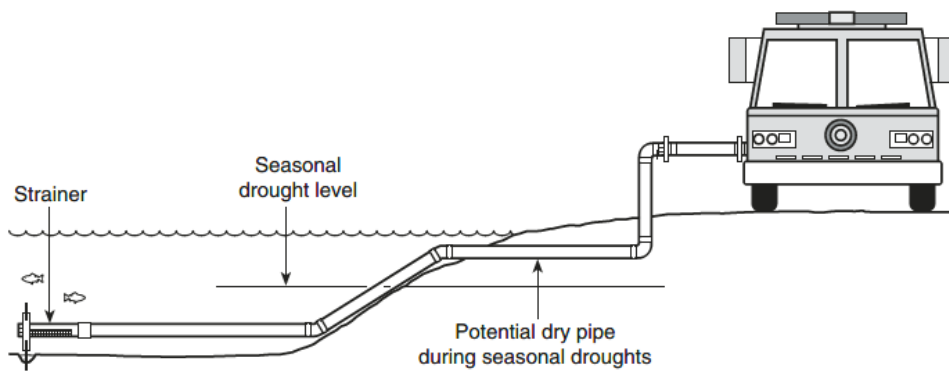


FIGURE A.8.3.5 Typical Dry Hydrant Installation Showing Impact of Seasonal Drought and Freezing Conditions.

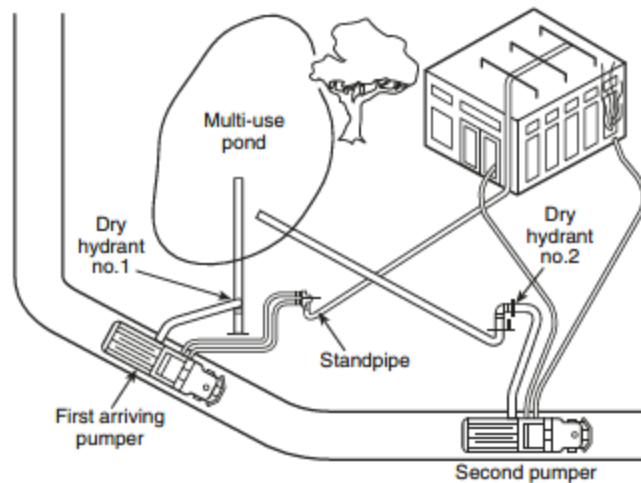


FIGURE A.8.4(a) Multiple Water Supply Points for an Industrial Occupancy.

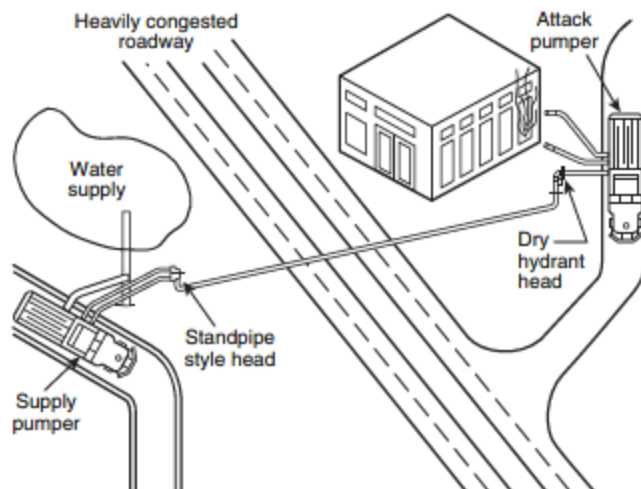


FIGURE A.8.4(b) Overcoming Roadway Obstructions in Supplying Water to a Building.

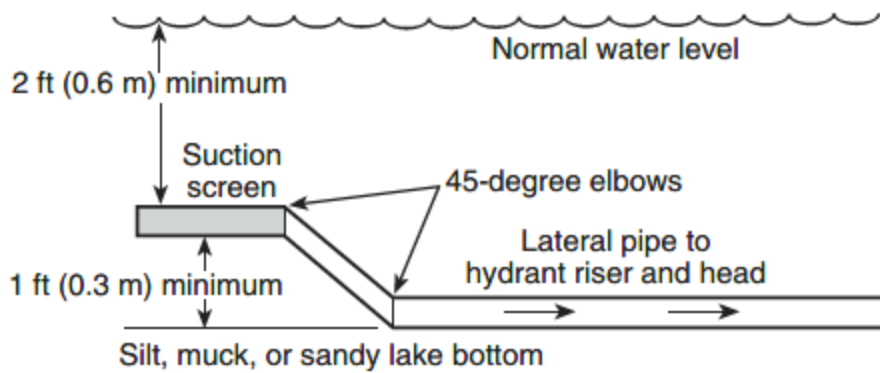


FIGURE A.8.5(a) Offset Screen Installation for Silt and Mud Conditions.

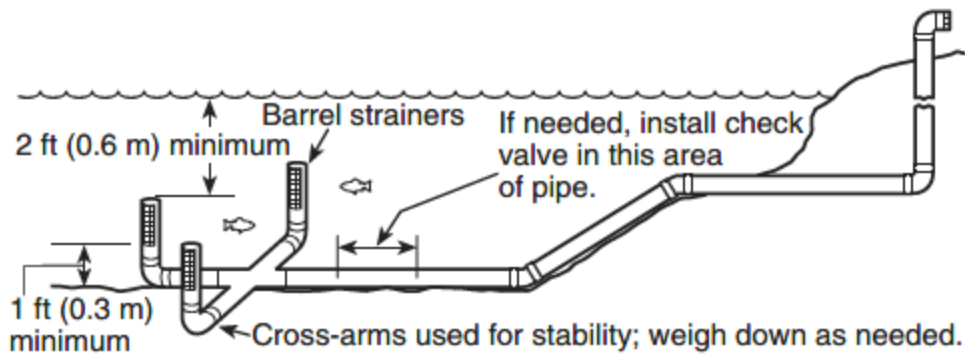


FIGURE A.8.5(b) Vertical Strainer Installation for Silt and Mud Conditions.

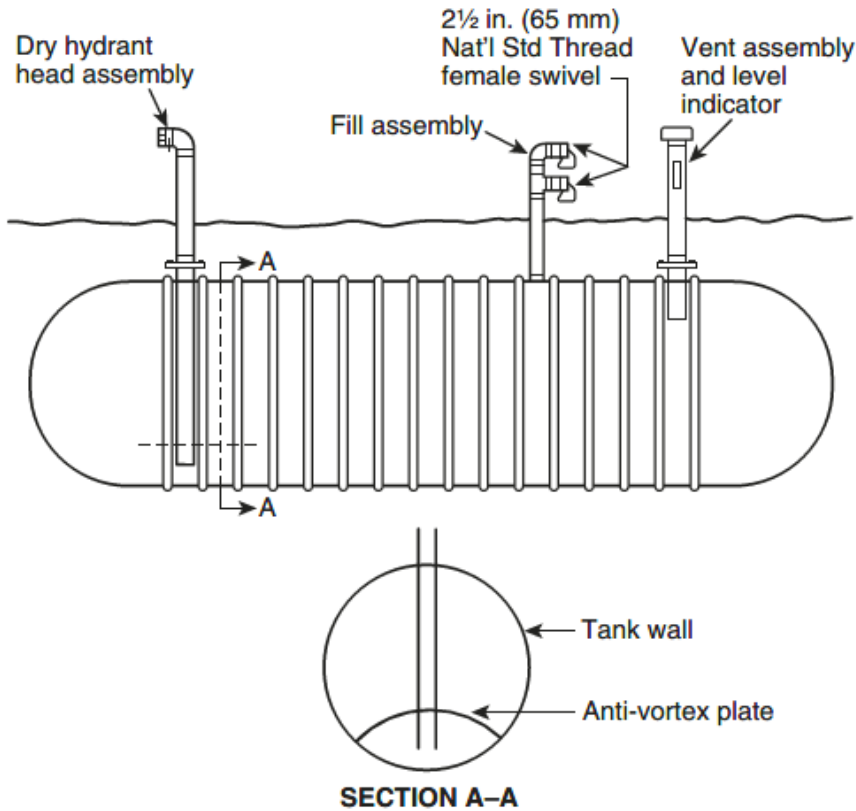


FIGURE B.5 Example of Construction of Water Cisterns Using an Underground Fiberglass Storage Tank.

