HAYS COUNTY
FIRE MARSHAL'S OFFICE
810 S. Stagecoach Trail, Suite 1200, San Marcos, TX 78666
TEL: 512-393-7300, Option 2
firemarshal@co.hays.tx.us

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Hays County Fire Marshal

TO: Hays County Fire Marshal Customers

SUBJECT: **INFORMATION BULLETIN 002**
Dry Hydrant Specifications for Compliance with County Fire Code and NFPA 1142

DATE: August 20, 2021

CREATED BY: Hays County Fire Marshal, Nathan P. Mendenhall

Purpose:

As a customer service initiative, the Hays County Fire Marshal's Office has created this bulletin to provide specifications on dry hydrants supplied by static water sources that have adequate water capacity (ponds, lakes, reservoirs, etc.). Informational Bulletin 001 shall be used for specifications on connections to fire protection water tanks. The purpose of this informational bulletin is to allow for flexibility with code requirements relating to Water Supply in unincorporated areas of the county which are not served by a Public Water System or where Public Water Supply pressures and/or flow rates are not adequate for fire protection and where a static water source with reliable water capacity is provided. This intent of this bulletin is to show that the spirit, intent, and minimal acceptable level of public health, welfare and safety are observed per the applicable adopted county fire and building codes.

Code References:

2018 International Fire and Building Code (IFC Section 507, Appendix B)
NFPA 22 Standard for Water Tanks for Private Fire Protection (Current Edition)
NFPA 24 Standard for the Installation of Private Fire Service Mains and Their Appurtenances (Current Edition)
NFPA 1142 Standard on Water Supplies for Suburban and Rural Fire Fighting (Current Edition)
NFPA 1963 Standard for Fire Hose Connections
Hays County Fire Marshal's Office Informational Bulletin 001: Fire Flow And Water Supply

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Background:

In the county's adopted fire code (2018 International Fire Code), under Appendix B, the *fire code official* is authorized to reduce the *fire-flow* requirements for isolated buildings or a group of buildings in rural areas or small communities where the development of full *fire-flow* requirements is impractical; and

Water supplies for fire-fighting purposes in rural and suburban areas in which adequate and reliable water supply systems do not exist, the *fire code official* is authorized to utilize NFPA 1142.

In rural areas of Hays County, public/municipal water systems are not always available. Alternative water sources (water storage tanks) are used to supply water for fire suppression operations. If your project is not within 300 feet of a public/municipal water system or if that system does not provide adequate flow for fire suppression operations, your project will require an alternative water supply (fire protection water tanks are the main water supply source, however other static water sources with reliable water and capacity such as ponds, lakes, and reservoirs can also be approved per the fire code official). Please review the reference material in this resource document. For any additional questions, please contact the Hays County Fire Marshal's Office by email at firemarshal@co.hays.tx.us

Water Flow Rate and Minimum Gallons Required:

The Hays County Fire Marshal's Office will calculate or allow a Texas licensed Fire Protection Engineer to calculate the flow rate using NFPA 1142 (Current Edition) or Appendix B of the 2018 International Fire Code as the standard for each project. However, the minimum water capacity for a static water source (other than a fire protection water tank) shall be 30,000 gallons to accommodate for some evaporation.

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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 underground metal surfaces shall be protected to prevent deterioration.
4. Dry hydrant connection shall be 5" STORZ with suction gaskets and a locking KNOX cap. The locking KNOX cap must be ordered and coordinated through the local fire department serving the property.
5. Dry hydrant systems, including 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 systems must be designed by a Texas-licensed Fire Protection Engineer (FPE). All plans submitted for approval must bear the seal and signature of the FPE.
7. A permit application for an Alternative Fire Protection system must be filed and plans submitted to www.hayscountypermits.com – The fee is $150 and includes the required inspection.
8. All connections shall be clean, and the appropriate sealing materials shall be used according to manufacturer's specifications to ensure that all joints are airtight.
9. System strainers shall be constructed to permit the required fire flow.
10. A working space of not less than 36 inches in width, 36 inches in depth and 78 inches in height shall be provided and maintained around the circumference of the free-standing dry hydrant, except as otherwise required or approved by the fire code official.
11. Dry hydrants shall be located such that they are accessible under all weather conditions.
12. Dry hydrants shall be located a minimum of 100 feet (30 m) from any structure.
13. Dry hydrants shall be located within two (2) feet and a maximum of seven (7) feet from the gutter face of the curb or painted edge of an emergency (fire) apparatus access road which meets the requirements of the adopted fire code.
14. Fire lane signage meeting the requirements of the adopted fire code shall be installed on the fire lanes serving the dry hydrant. No parking or other obstacles shall be allowed within the fire lane per Texas statute and the adopted fire code.

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15. Dry hydrants shall be protected from damage by vehicles per Section 312 of the adopted fire code (see included specs).
16. Dry hydrant locations shall be made visible using signage above the connection with the words "Dry Hydrant – Fire Department Use Only".
17. There shall not be less than two (2) feet of water above the strainer and not less than one (1) foot of water below the strainer.

Permits:

Dry hydrant systems and their piping are considered components of a Fire Protection System and plan review and construction permits are required to be obtained from the Hays County Fire Marshal's Office prior to installation of any of these systems.

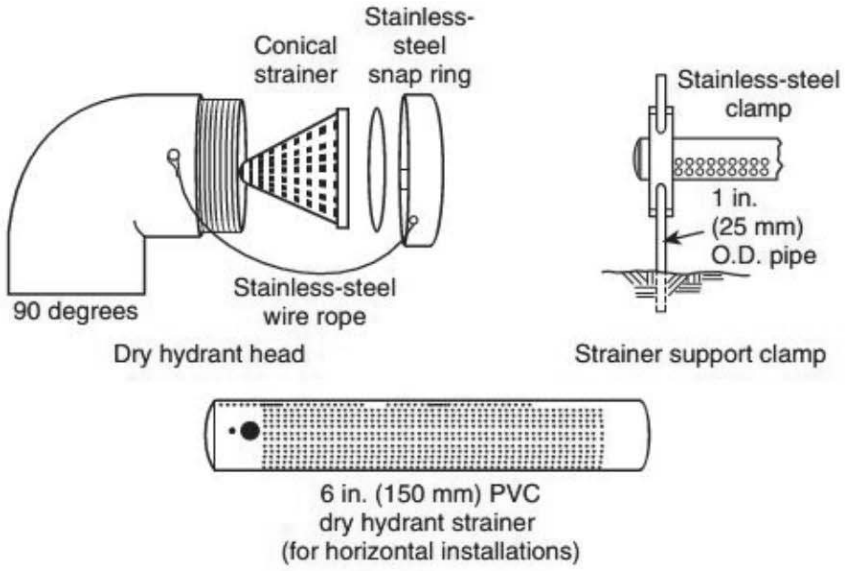


FIGURE A.8.3.2(a) Commercially Available Dry Hydrant Components.

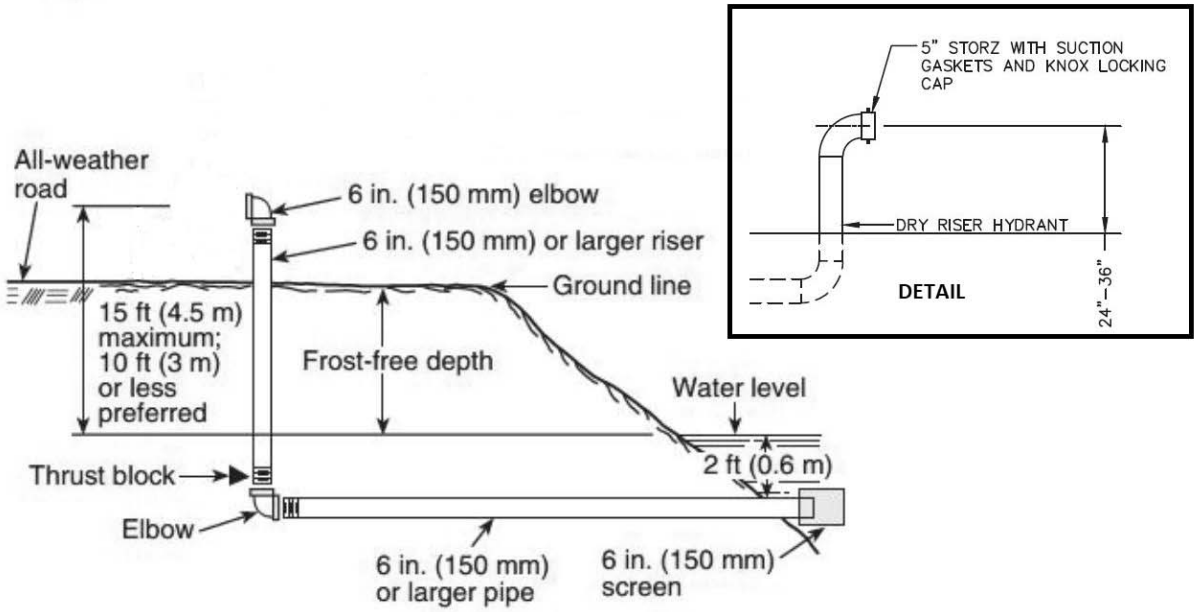


FIGURE A.8.3.2(b) Exploded View of Dry Hydrant Construction.

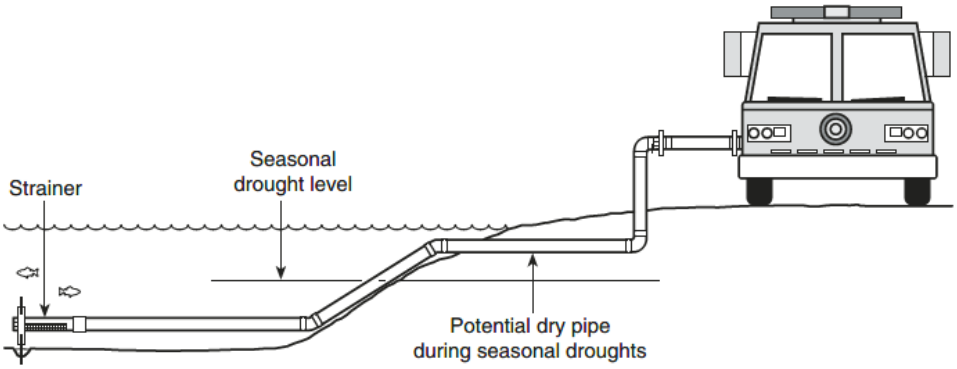


FIGURE A.8.3.5 Typical Dry Hydrant Installation Showing Impact of Seasonal Drought and Freezing Conditions.

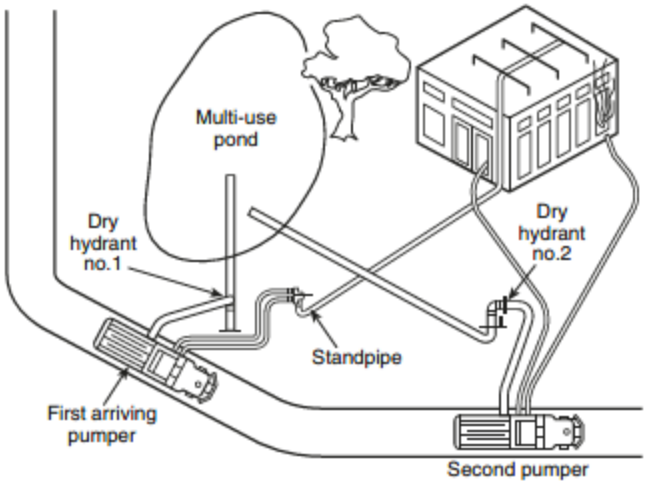


FIGURE A.8.4(a) Multiple Water Supply Points for an Industrial Occupancy.

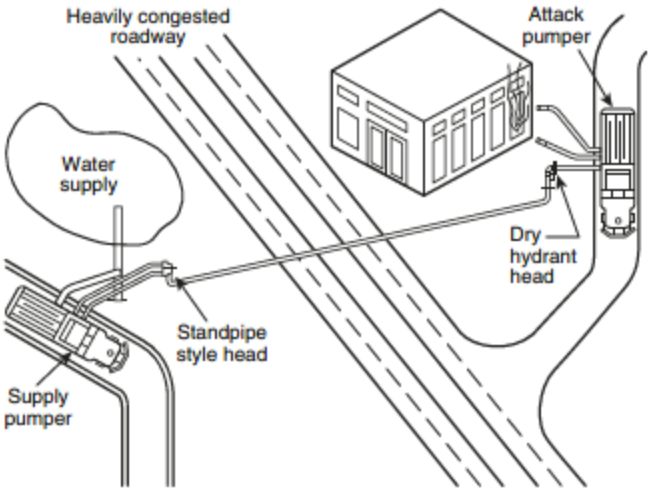


FIGURE A.8.4(b) Overcoming Roadway Obstructions in Supplying Water to a Building.

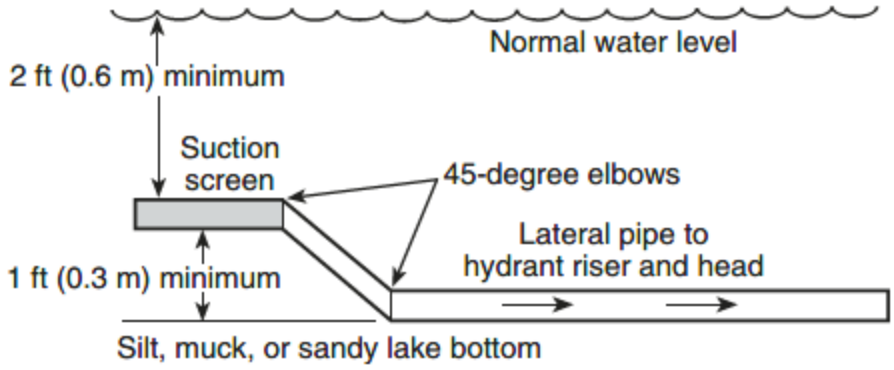


FIGURE A.8.5(a) Offset Screen Installation for Silt and Mud Conditions.

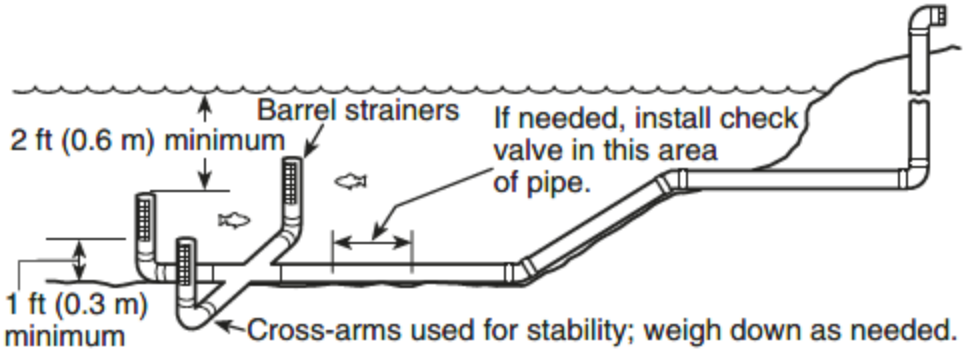


FIGURE A.8.5(b) Vertical Strainer Installation for Silt and Mud Conditions.

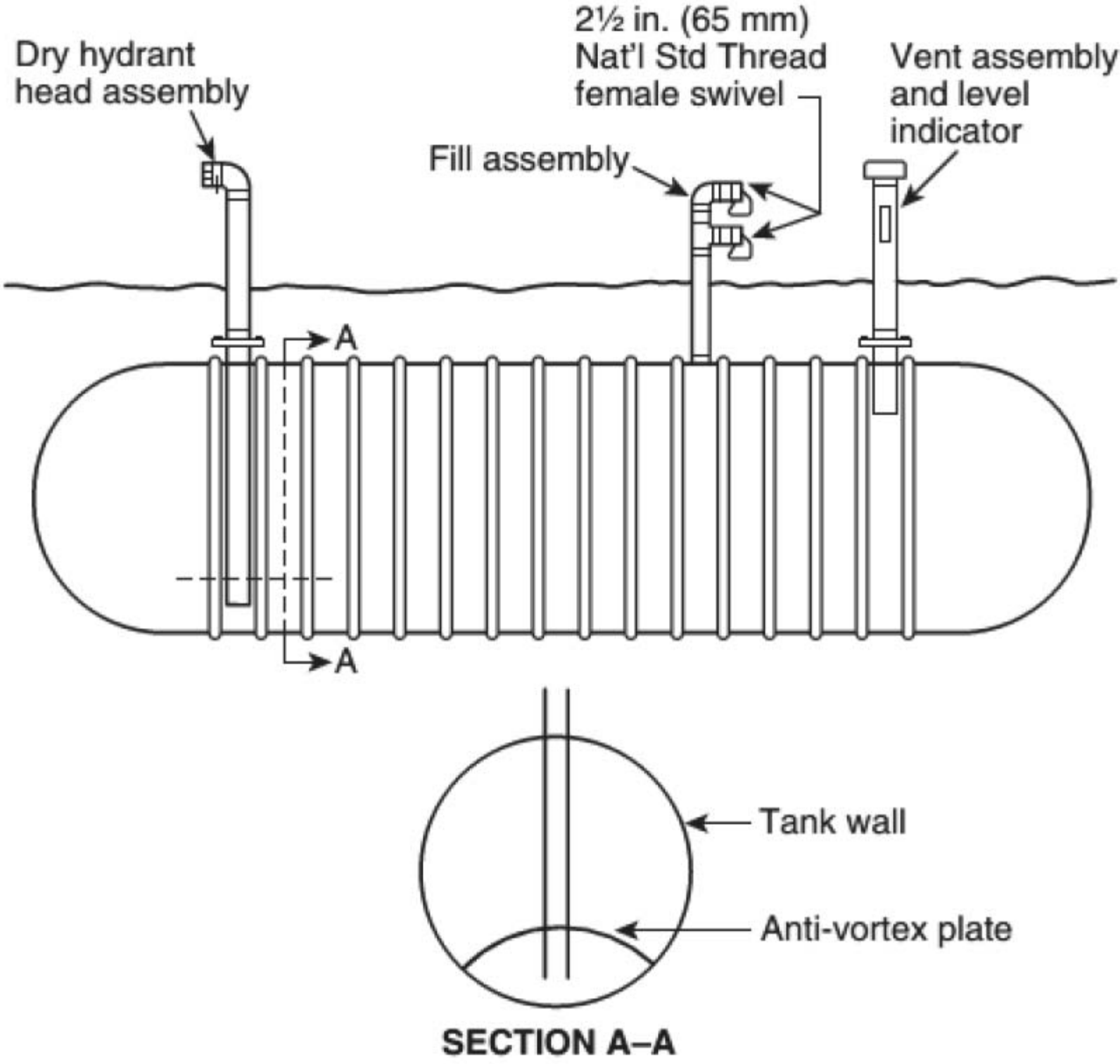
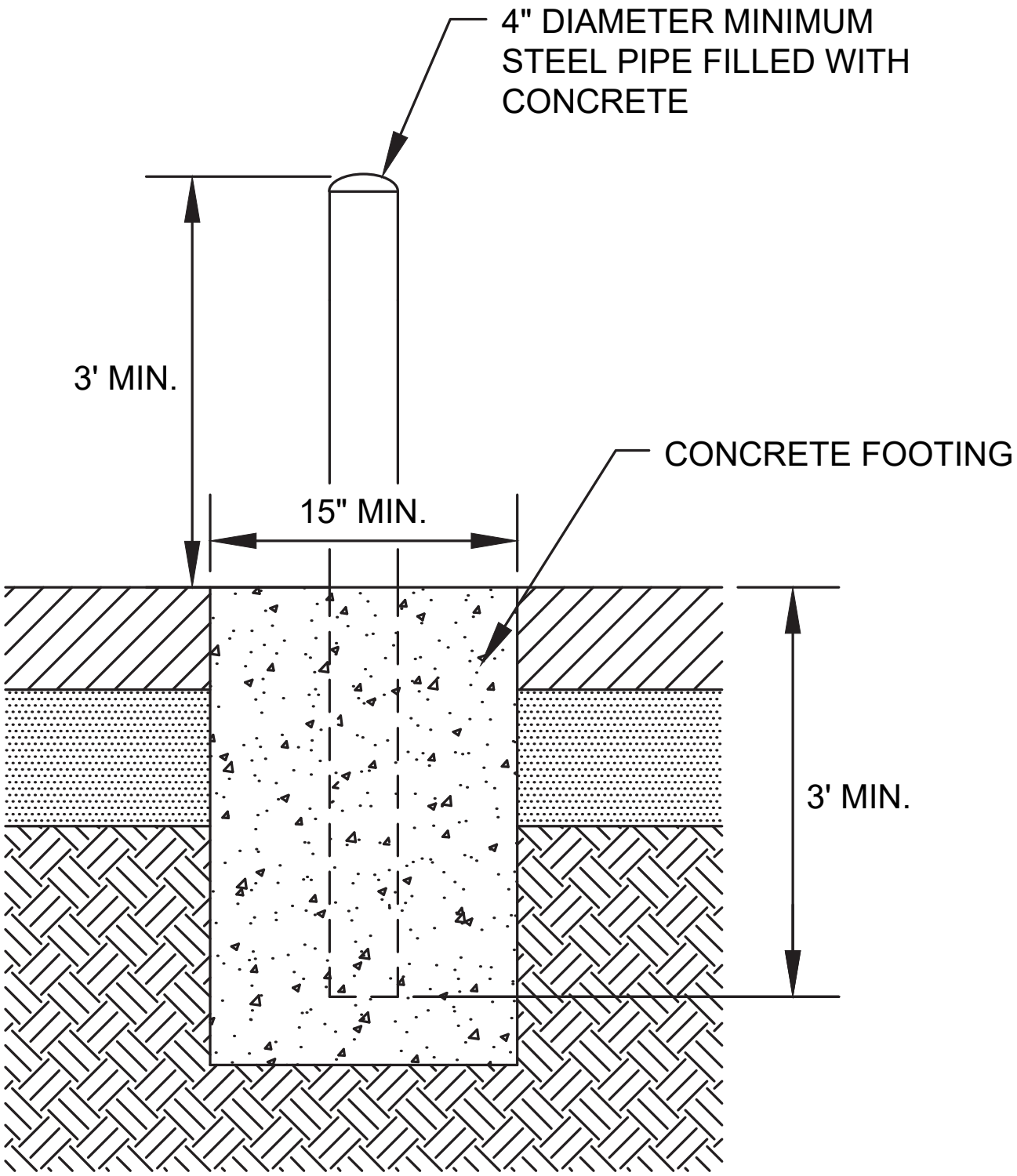


FIGURE B.5 Example of Construction of Water Cisterns Using an Underground Fiberglass Storage Tank.



PIPE BOLLARD DETAIL

N.T.S.

Located not less than 3' from protected object and
not more than 4' apart on center