



**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](mailto:firemarshal@co.hays.tx.us)



**NATHAN P. MENDENHALL, IAAI-FIT, NREMT  
Hays County Fire Marshal**

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TO: Hays County Fire Marshal Customers

SUBJECT: **INFORMATION BULLETIN 001**  
Fire-Flow Requirements and Water Supply for Compliance with  
County Fire Code

DATE: June 10, 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 allow for flexibility with code requirements relating to Fire-Flow and 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**. 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 and 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 25 Standard for the Inspection, Testing, and Maintenance of Water-Based Fire Protection Systems (Current Edition)  
NFPA 1142 Standard on Water Supplies for Suburban and Rural Fire Fighting (Current Edition)

**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



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For information regarding 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. 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](mailto: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 fire protection water tank shall be 15,000 gallons (1500 GPM for 10 minutes). This capacity must be maintained at all times and an audio/visual alarm must be installed that will notify the property owner if water capacity falls below 15,000 gallons (it is a violation of the fire code to tamper with the alarm). Tanks must comply with the most current edition of NFPA 22.

**Water Storage Tank Specifications:**

1. Tank elevation shall be equal to or higher than the fire department connection (FDC). All tanks must comply and be designed to the standards of the current edition of NFPA 22 – Standard for Water Tanks for Private Fire Protection. All tanks shall contain an audible/visual (horn strobe or similar) device that will activate to provide notification if the tank is not full. This device must be in addition to the normal visual level indicator. Tank size may be increased to serve multiple structures on a single parcel.
2. Location of the Fire Department Outlet/Dry Hydrant shall be shown on the Fire Protection Site Plan when submitted to the Fire Marshal's Office for review. Consideration will be given to topography, elevations, distances from structures, fire



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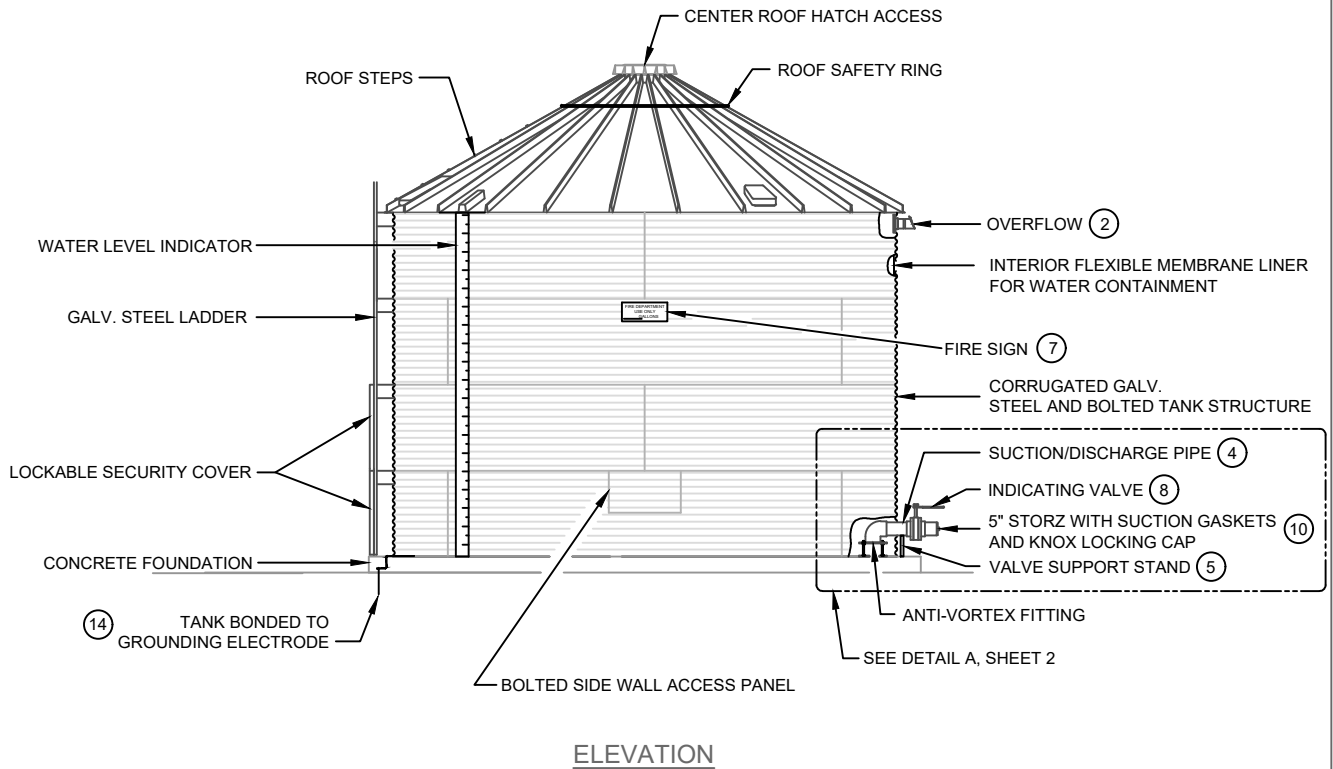
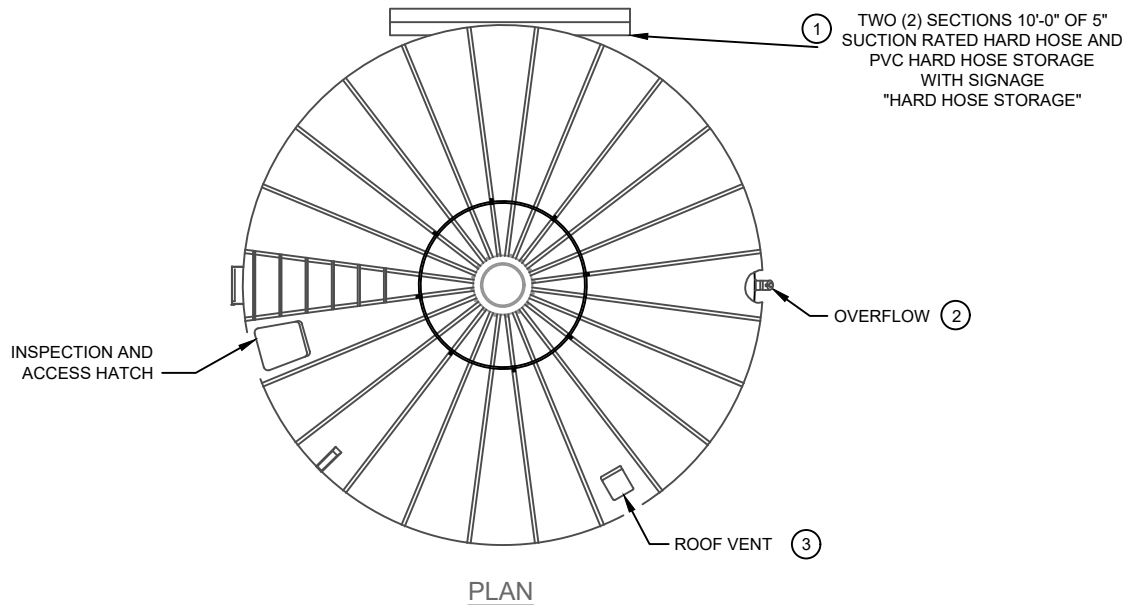
apparatus access roads, etc. The Fire Department Outlet/Dry Hydrant shall be located within two (2) foot and a maximum of seven (7) feet from the gutter face of the curb or painted edge of an emergency (fire) apparatus access road which meets the requirements of the adopted fire code. A Post Indicator Valve (PIV) must be installed for remote connections.

3. The Fire Department Outlet/Dry Hydrant must be physically protected against impact per the requirements of Section 312 of the 2018 International Fire Code.
4. The tank's Fire Department Outlet and the water tank must be located on the same side of the emergency (fire) apparatus access road.
5. The Fire Department Outlet shall be identified by a metal sign installed above the connection with the words "Dry Hydrant – Fire Department Use Only". If a fire sprinkler system is provided, a fire pump and a wet fire hydrant is required. The placement of the fire hydrant must be within two (2) foot and a maximum of seven (7) feet from the gutter face of the curb or painted edge of an emergency (fire) apparatus access road. The hydrant must be within 30 feet of the Fire Department Connection for buildings with fire protection systems and must be located on the same side of the fire apparatus access roadway (fire lanes).
6. 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 in front of and to the sides of wall-mounted fire department outlets and around the circumference of free-standing dry hydrants, except as otherwise required or approved by the fire code official (2018 IFC 912.4.2).
7. There shall be a locking Knox Cap installed on the Fire Department Outlet. This is ordered through the local fire department serving the property.
8. Please review the attached specs for more information. Fire hydrant and bollard specs are also provided, if necessary.

**Permits:**

Water supply tanks for fire protection, fire pumps, underground fire lines, private fire hydrants, and fire sprinklers are all 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. It is a criminal violation of local and state law for failure to comply.

Corrugations on roof panels are not shown for clarity.



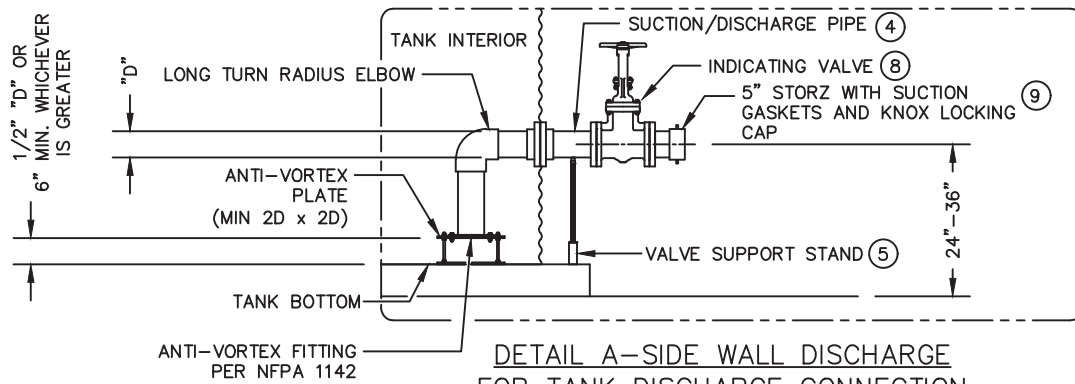
WATER TANK STRUCTURE AND FOUNDATION  
SHALL BE DESIGNED BY A TEXAS LICENSED ENGINEER

|          |            |  |               |
|----------|------------|--|---------------|
| TITLE    |            | NFPA COMPLIANT<br>HCFMO WATER STORAGE TANK<br>SIDE WALL CONNECTION |               |
| DWG. NO. |            | HCFMO-WATER TANK-1   | REV. NO.<br>C |
| SIZE     | SCALE      | SHEET 1 OF 2   |               |
| A        | 1/8"=1'-0" |  |               |

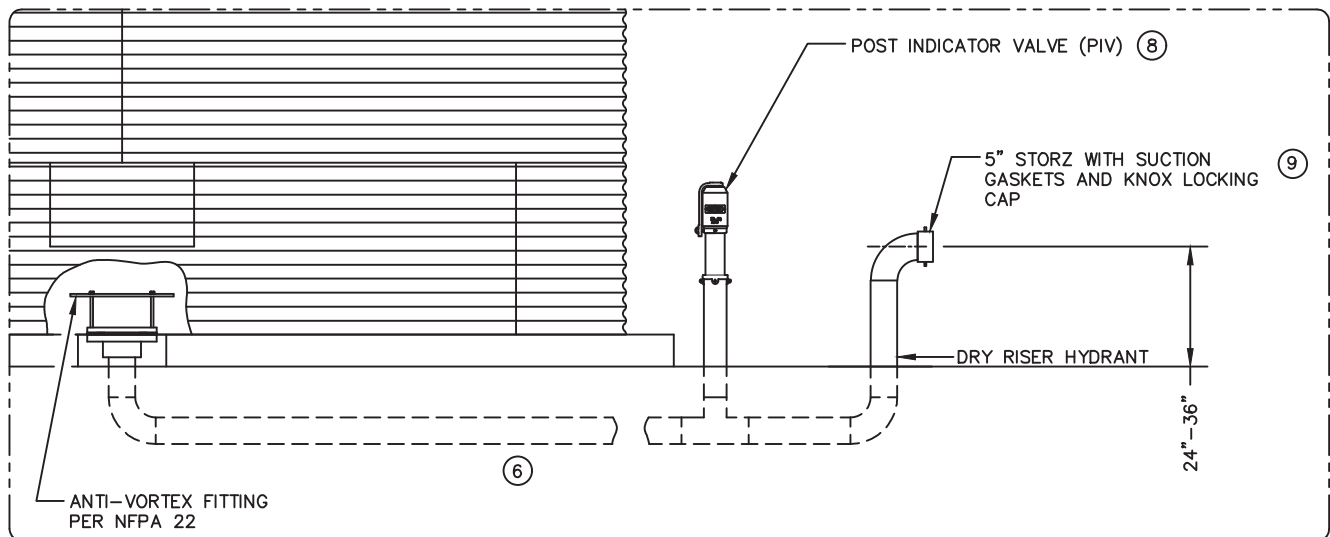


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|     | BY | DATE   |
|-----|----|--------|
| DWN | IU | 4/1/21 |
| CKD | CL | 4/1/21 |
| ENG | CL | 4/1/21 |



DETAIL A-SIDE WALL DISCHARGE  
FOR TANK DISCHARGE CONNECTION



DETAIL B-TANK BOTTOM DISCHARGE  
FOR TANK DISCHARGE CONNECTION  
(OR FIRE SUPPRESSION SYSTEM)

**NOTES:**

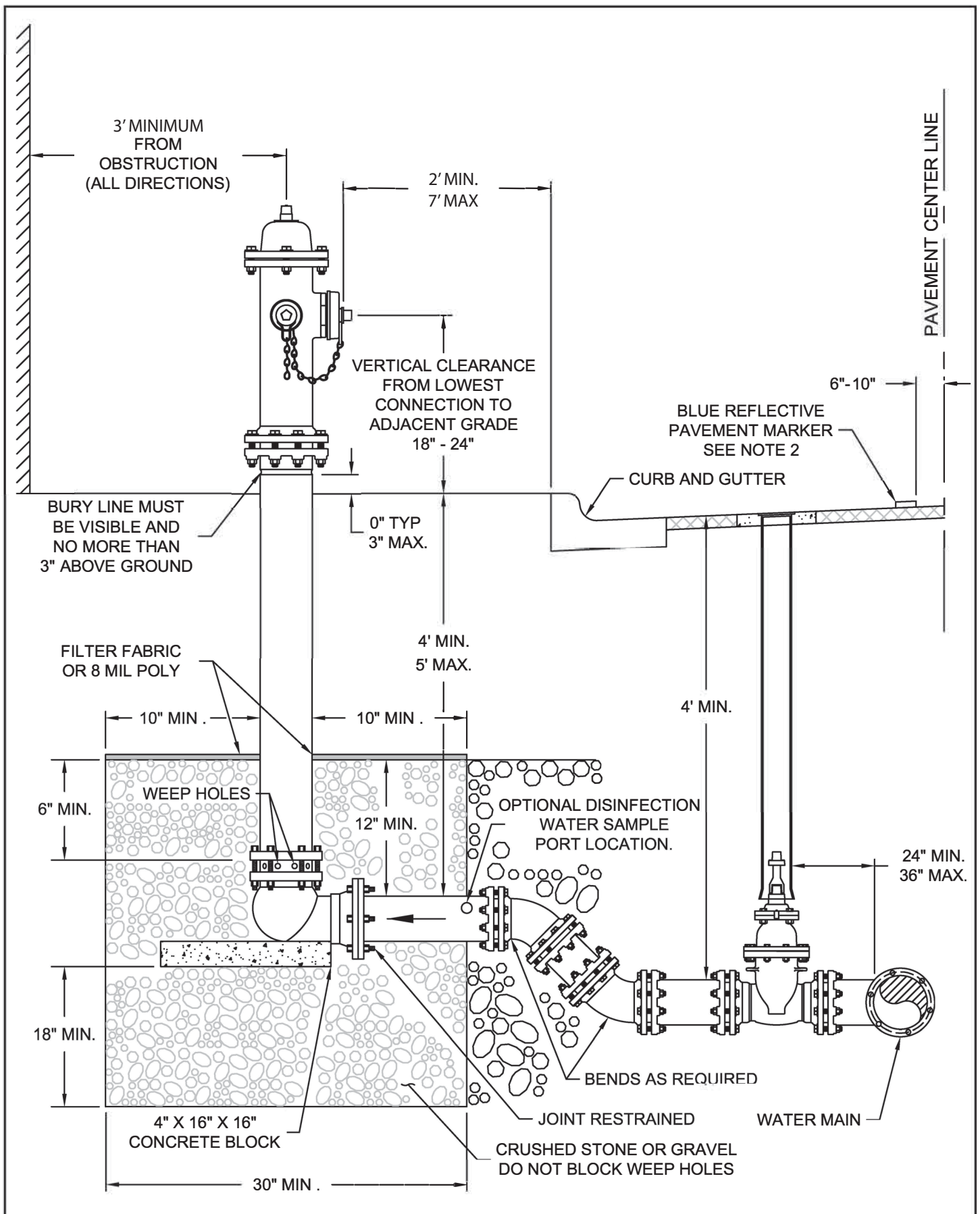
- (2) 10' SECTIONS OF HARD HOSE. (1) WITH 5" STORZ ON BOTH ENDS. (1) WITH 5" STORZ ON ONE END AND 5" NST (NATIONAL STANDARD THREAD) FEMALE ON OTHER END WITH ADAPTOR FROM 5" NST MALE TO 5" STORZ. ALL MUST BE ENCLOSED IN HARD HOSE STORAGE.
- OVERFLOW TO BE ONE PIPE SIZE LARGER THAN INFLOW OR MAKE-UP WATER PIPE.
- THE ROOF VENT OPENING MUST HAVE A GROSS CROSS SECTION AREA OF HALF THE AREA OF THE DISCHARGE PIPE OR FILL PIPE, WHICHEVER IS GREATER.
- DISCHARGE PIPE SHALL BE BASED ON HYDRAULIC DEMAND BUT NOT LESS 6" IN DIAMETER. DISCHARGE PIPE MUST BE SCHEDULE 40 STEEL.
- VALVE SUPPORT STAND.
- UNDERGROUND PIPING SHALL MEET NFPA 24 REQUIREMENTS.
- EACH TANK SHALL HAVE A SIGN WITH REQUIRED GALLON CAPACITY. SIGN MUST BE PLACED ON TANK SIDE FACING FIRE APPARATUS ACCESS ROADWAY (FIRE LANE).
- A LISTED CONTROL VALVE SHALL BE PLACED IN THE DISCHARGE PIPE BETWEEN THE TANK AND THE TANK DISCHARGE CONNECTION.
- THE DISCHARGE CONNECTION MUST BE A 5" STORZ WITH SUCTION GASKETS AND KNOX LOCKING CAP. THE DISCHARGE CONNECTION MUST BE LOCATED BETWEEN (2) TWO AND (7) SEVEN FEET OF THE APPROVED FIRE APPARATUS ACCESS ROADWAY. WHERE NO CURB EXISTS, BOLLARDS COMPLYING WITH THE HAYS COUNTY FIRE CODE MAY BE REQUIRED.
- ALL PLASTIC PIPE SURFACES SHALL BE PRIMED AND PAINTED TO PREVENT DETERIORATION.
- ALL TANKS SHALL BE INSPECTED, TESTED AND MAINTAINED IN ACCORDANCE WITH NFPA 25.
- THE FILL PIPE MUST DISCHARGE INTO THE OPPOSITE SIDE OF THE TANK FROM THE TANK DISCHARGE CONNECTION WITH AN AIR GAP. FILL PIPE MUST BE CONNECTED TO AN AUTOMATIC WATER SUPPLY.
- TANKS MUST BE LOCATED A DISTANCE OF AT LEAST ONE AND A HALF TIMES THE HEIGHT OF THE ADJACENT BUILDING UNLESS TANK IS FIREPROOFED WITH A FIRE RESISTANCE RATING OF AT LEAST 2 HOURS.
- ALL TANKS MUST BE BONDED TO A GROUNDING ELECTRODE.
- ALL TANKS MUST INCLUDE A STRUCTURAL DESIGN CALCULATION PACKAGE COMPLIANT TO NFPA 22 THAT IS STAMPED BY A TEXAS LICENSED ENGINEER.



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|   |                     |               |         |
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| DWG. NO.<br>HCFMO-WATER TANK-1  |                     | REV. NO.<br>D |         |
| SIZE<br>A   | SCALE<br>1/8"=1'-0" | SHEET<br>2    | OF<br>2 |

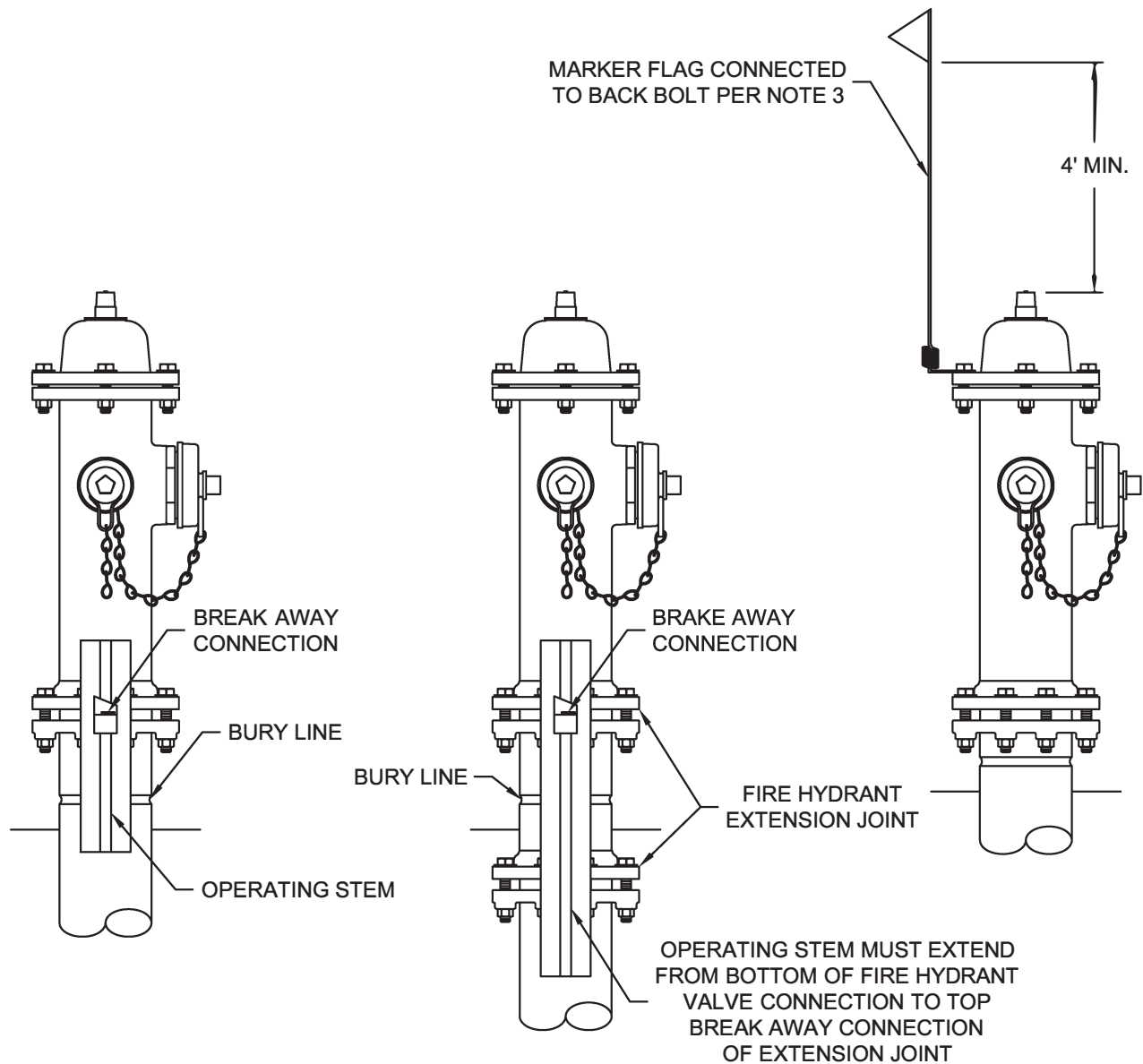


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THE ARCHITECT/ENGINEER ASSUMES  
 RESPONSIBILITY FOR APPROPRIATE USE  
 OF THIS STANDARD.

**511-17-HC**  
 1 OF 2





**NOTES:**

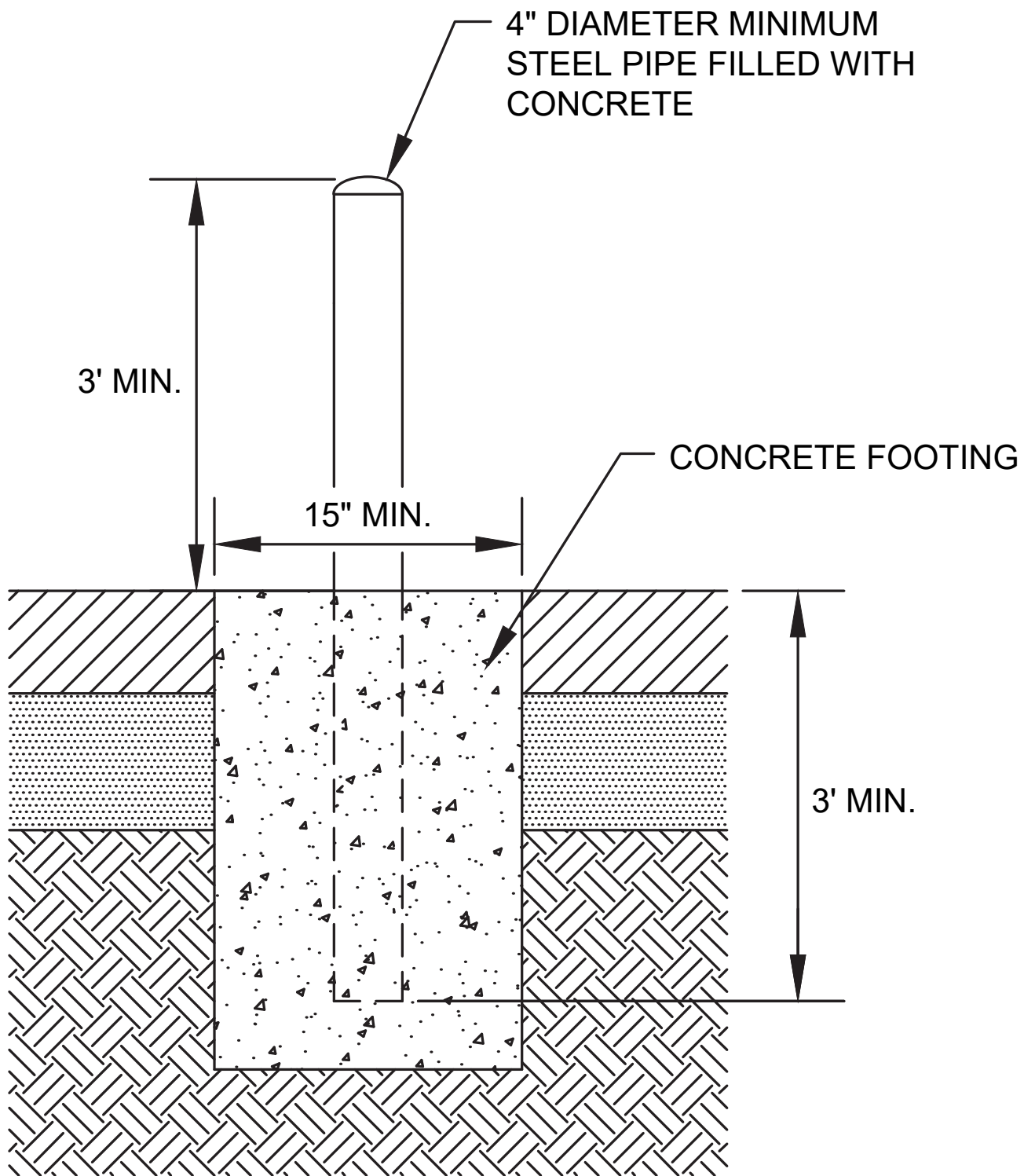
1. PUBLIC HYDRANTS SHALL BE FACTORY PAINTED WITH BRIGHT ALUMINUM BASED SILVER PAINT AND PRIVATE HYDRANTS SHALL BE PAINTED RED.
2. A BLUE REFLECTIVE PAVEMENT MARKER MUST BE PLACED WITH EVERY FIRE HYDRANT ADJACENT TO A PAVED ROADWAY 6"-10" OFF CENTER LINE OF ROAD ON FIRE HYDRANT SIDE.
3. FIRE HYDRANTS OUTSIDE ROW SHALL HAVE MARKING FLAGS IN RURAL AREAS. (SEE PAGE 2)
4. FIRE HYDRANT MUST GO ON PAVEMENT SIDE OF FENCE, OR FENCE MUST BE REBUILT AROUND FIRE HYDRANT TO ALLOW ACCESS FROM PAVEMENT TO FIRE HYDRANT.
5. FIRE HYDRANT MAY ONLY MINIMALLY OBSTRUCT SIDEWALK AT EITHER EDGE
6. NO OBJECT THAT WILL OBSTRUCT MAINTENANCE OR USE OF THE FIRE HYDRANT WILL BE LOCATED WITH IN 3 FEET OF THE FIRE HYDRANT INCLUDING BUT NOT LIMITED TO (TREES, FENCES, TELEPHONE POLE, DUMPSTER, PERMANENT/NON-PERMANENT STRUCTURES,...ETC.).
7. WRAP ALL UNDERGROUND PIPING FROM MAIN TO BURY LINE IN 8 MIL POLY. CUT WRAP AT WEEP HOLES TO ALLOW HYDRANT TO DRAIN.
8. WHERE FIRE HYDRANTS ARE SUBJECT TO IMPACT BY A MOTOR VEHICLE, GUARD POSTS SHALL BE INSTALLED IN ACCORDANCE WITH SECTION 312 OF THE INTERNATIONAL FIRE CODE.



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**511-17-HC**  
 2 OF 2



### PIPE BOLLARD DETAIL

N.T.S.

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