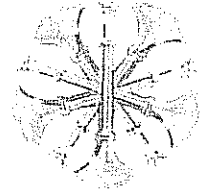




# East Greenwich Fire District

284 MAIN STREET  
P.O. BOX 241  
EAST GREENWICH, RHODE ISLAND 02818-0241  
TEL: (401) 886-8686 FAX: (401) 886-8692




## Office of the Chief:

May 2003 revised November 2007

## UNDERGROUND WATER TANK SPECIFICATIONS

- 1). Tank(s) must be installed, and acceptance approval given by the East Greenwich Fire District, prior to the issuance of the third Certificate of Occupancy (C.O.) by the Town of East Greenwich.
- 2). Plans and specifications for the materials, location, and installation of the tank, must be approved by the Chief, or his/her designee, of the E.G. Fire District, prior to installation. Siting of the tank to a particular location must be done by a licensed engineer.
- 3). Tank shall be located no less than ten(10) feet and no more than twenty(20) feet from a paved, maintained roadway. In this manner year-round access is provided, without impinging on sidewalks.
- 4). The design of the cistern must be submitted to the Fire Chief or designee, for approval prior to construction. All plans must be signed by a licensed professional engineer.
- 5). National Fire Protection Association (N.F.P.A.) Standard 22, "Water Tanks for Private Fire Protection", and Standard 1142, "Water Supplies for Suburban and Rural Fire Fighting", 2007 edition, including Annex B, as amended by this document, will be used as installation guidelines.
- 6). Tanks shall be constructed of precast concrete or fiberglass. Poured in place concrete may be acceptable after consultation with the Fire Chief. Concrete shall be 4,000 p.s.i., reinforcing steel shall conform to ASTM-A615; min. wall thickness is 8". Top of tank will be installed below frost line, as determined by the Building Official. Perimeter of tank at floor/wall joint should be sealed with 8 in. (20.3 cm) PVC waterstop.
- 7). Tank/cistern shall be located below frost line. Cistern will NOT be placed on the surface and an artificial mound created over the tank.
- 8). Minimum tank size is ten thousand (10,000) gallons; maximum tank size is 30,000 gallons.
- 9). All suction and fill piping shall be Schedule 40 steel. All vent piping must be ASTM Schedule 40 PVC. All PVC piping must have glued joints.

- 10). Piping shall be 8" steel with sweeping 90 degree angle (preferred) OR 45 degree to 45 degree angles (straight 90 degree angle will not be permitted due to friction loss). The fire department connection (suction) shall consist of a 6" outlet with a 6" double female permanently attached. The entire connection shall have a cap on the end. All horizontal suction piping must slope slightly uphill toward the pumper connection. 
- 11). Suction pipe connection (FDC) shall extend no more than 24" above finish grade where vehicle shall be located.
- 12). Suction pipe should be supported either to top of tank or to a level below frost. Suction piping shall end no less than 6" and no more than 10" above the tank bottom.
- 13). Vent piping of 8", and 2" piping to measure water in tank, shall be Schedule 60 or 80 PVC conforming to ASTM standards.
- 14). Water measurement (2") piping shall be installed directly behind, and attached to, the F.D.C. piping to prevent future accidental breakage.
- 15). Filler pipe siamese (2 - 2.5" NST inlets) shall be no higher than 36 in. above final backfill grade.
- 16). Piping shall NOT pierce side walls of cistern.
- 17). Bedding for tank shall consist of a minimum of 12 inches of 3/4" to 1.5" crushed, washed stone, compacted. No fill can be used under stone. Base shall be designed so that cistern will not float when empty.
- 18). Tank access (manhole) shall consist of an adapter, 36 to 38 inch riser and lid with special safety screws or bolts. Lid will be at ground level. These parts can be purchased at Orenco in Oregon ([www.orengo.com](http://www.orengo.com)) or Zabel in Kentucky ([www.zabelzone.com](http://www.zabelzone.com)). Other comparable risers, such as brick, steel frame, are allowable. When using risers of other than an interlocking system, the manhole frame and cover shall be same as utilized by the Town of East Greenwich, with the exception that it shall be marked "WATER" on the cover. (Town of East Greenwich requirements are met by the City Foundry Co., Inc. East Providence, RI (401) 438-0192.) Locks, if needed, shall be "Master Padlock" size #3, with master key. Lock to be provided by the E.G.F.D. The tank access or manhole shall be no less than 24 inches wide.
- 19). The cistern must be completed and inspected before any backfilling can be done.
- 20). The cistern must be filled with clean, potable water. Water from ponds, rivers or other natural sources is not allowed.
- 21). Backfill must be screened gravel with stones no larger than 1.5" and compacted to 95%.

characteristics:

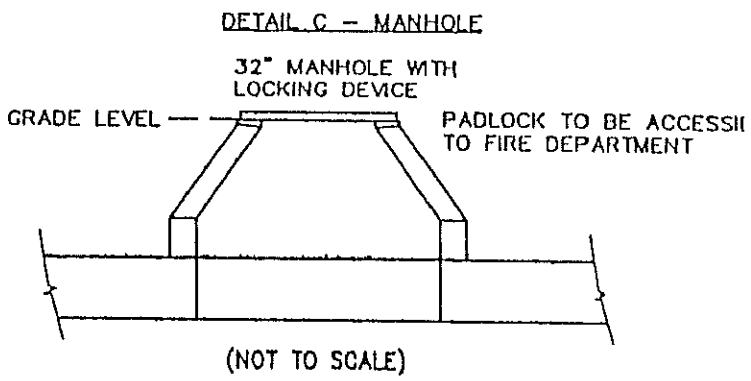
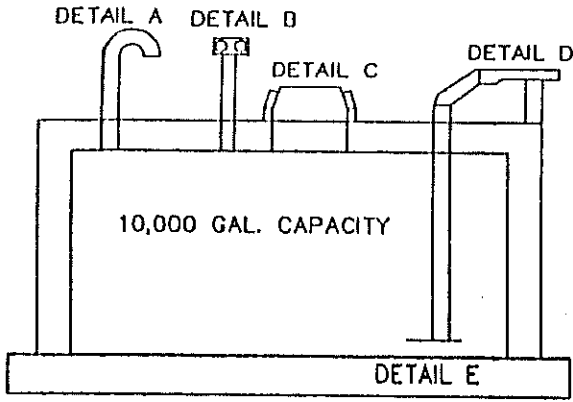
A). 4 feet of fill.

B). The top and highest 2 feet of sides of the cistern shall be insulated with vermin-resistant foam insulation, and 2 foot of fill.

23). The bottom of the suction pipe to the pumper connection must not exceed 14 feet vertical distance.

24). Prior to surface treatment commencing, the tank must be completed, in service and accepted by the East Greenwich Fire District Fire Chief or designee.

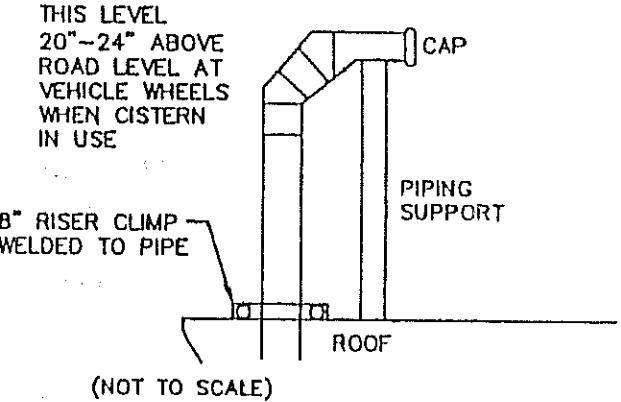
25). All deviations must be approved by the Fire Chief or his/her designee.



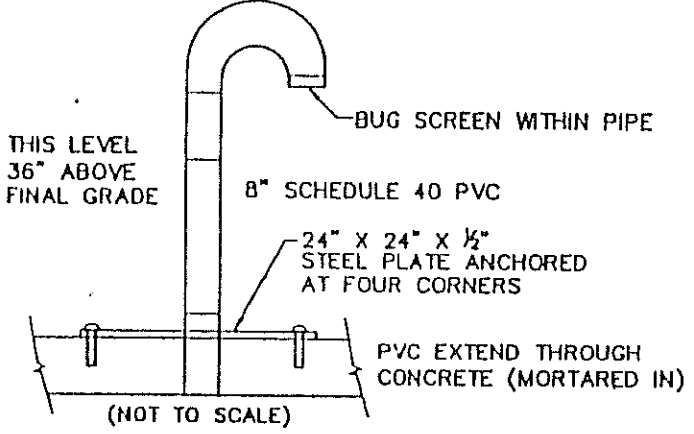
NOTES:

1. MINIMUM 12" OF 3/4" TO 1 1/2" CRUSHED WASHED STONE (COMPACTED) AS BASE UNDER CISTERN
2. SEE SPECIFICATIONS AND OTHER DRAWINGS FOR DETAILS.
2. ALL DRAWING ARE FOR ESTIMATING PURPOSE ONLY AND ARE NOT INTENDED FOR FOR USE AS DESIGN.

DETAIL D - UPPER SECTION



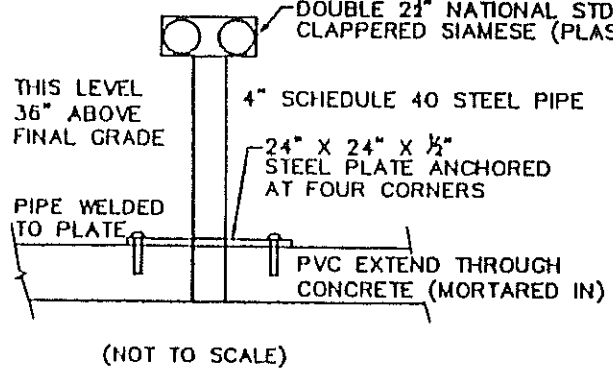
DETAIL A - VENT PIPE



FITTING LIST FROM CAP

- 4 1/2" NATIONAL HOSE THREAD ADAPTER WITH CAP
- 15" MINIMUM (LONG) 5" SCHEDULE 40 NIPPLE
- 8" X 5" ECCENTRIC REDUCER
- 8" WELDED 45 DEGREE ELBOW
- 8" NIPPLE AS NEEDED
- 8" WELDED 45 DEGREE ELBOW
- ALL PIPE SCHEDULE 40 STEEL.

DETAIL B - FILL PIPE



DETAIL E - LOWER SECTION PIPE

