

General Specifications for Water Mains Perdido Bay Water, Sewer and Fire Protection District

1. GENERAL

- 1.1 These specifications cover the general requirements for the installation of water mains and appurtenances within the district boundaries of the Perdido Bay Water, Sewer, and Fire Protection District. These specifications are intended to serve as a general guideline for the installation of water mains; however, more specific requirements may be instituted by the District's Board in order to insure that any water mains installed meet the service requirements of the water system.
- 1.2 All water system improvements shall be installed in accordance with the Baldwin County Subdivision Regulations, the Alabama Department of Environmental Management Regulations, and applicable specifications of the America Water Works Association.
- 1.3 All water system improvements shall be designed as to provide a minimum fire flow of 500 gallons per minute while maintaining a sustained 35 psi residual.
- 1.4 A minimum 8 inch water main size is required for all new water mains installed within the District.

2. PIPE

- 2.1 The PVC water pipe shall be Blue Class 200. The PVC pipe shall conform to the requirements of ASTM Designation D1784 for PVC compounds and ASTM Designation D2241 for PVC pipe. Ductile iron pipe shall be Class 50 with push-on joints. The ductile iron pipe shall be tar coated and cement lined, and shall comply with AWWA Standard C104.
- 2.2 Fittings for water mains shall be compact ductile iron C153 suitable for use with the pipe being used. The fittings shall be tar coated and cement lined. Retainer glands shall be used at all changes in direction of the line. Thrust blocks shall be installed at fittings as required to insure that the fittings are securely anchored to the water main.
- 2.3 No. 10 THW copper locator wire shall be placed in the trench with all non-metallic pipe used. The locator wire shall be placed 18 inches above the top of the pipe.

- 2.4 All pipes shall be installed with a minimum depth of 30 inches. All pipe shall be installed in accordance with the manufacturer's instructions. Ductile iron pipe shall be utilized for creek crossings, and in all locations where future construction or maintenance activities could potentially damage PVC pipe.

3. WATER VALVES

- 3.1 Water valves shall be American Darling or equal resilient gate valves which comply with AWWA Standard C509. Tapping sleeves shall be all stainless steel having full 360 degree gaskets to fit around the existing pipe, and tapping valves shall be American Darling or equal resilient seat. All valves shall be placed in valve boxes and have nut operators. Valve boxes shall be set at least 2" above grade level and have pre-formed concrete valve box pads.

4. FIRE HYDRANTS

- 4.1 Fire Hydrants shall have a main valve opening size of not less than 5 ¼ inches, and shall have two 2 ½ inch hose connections and one 4 ½ inch pumper connection. Fire Hydrants shall be of the break-away traffic model type and shall be American Darling or Equal.

- 4.2 Ductile iron pipe shall be used for all fire hydrant leads. The fire hydrant shall be anchored to the valve and main by the use of retainer glands.

- 4.3 All fire hydrants shall be provided with a 6" isolation valve.

5. SERVICE CONNECTIONS

- 5.1 All water service tubing shall be ¾" Type K copper and the copper tubing shall be run from the main to the curb stop.

- 5.2 The service connections to be installed shall include all items required to set the service. The items provided shall include the tap at the main, a corporation stop, curb stop, and a meter box. The meter boxes shall be plastic with cast iron reader windows and a 2" hole for touch read sensors. The corporation stop shall be a Ford F1000 or equal with grip nut. The curb stop shall be a Ford B43-232 WG or equal (grip nut to swivel).

5.3 Any copper tubing installed under existing paved roads shall be installed by dry boring or by pushing, and all services shall be incased in 2" PVC. The service tubing shall not be installed by jetting or water boring.

5.4 All service taps on PVC pipe shall be made with the use of single strap brass saddles, Ford S70 or equal . All service taps on the water mains shall be installed horizontal or as directed by the Water System Manager. The operating nut on the corporation stop shall be installed vertical so that it can be operated from directly above the corporation stop.

6. CASING

6.1 Casing pipe shall be installed under all paved roads or roads which are to be paved. The casing pipe shall be steel pipe which meets API Specifications 5-L for standard weight welded steel line pipe. The casing pipe shall have a wall thickness of 0.25 inches and shall be installed by dry boring and jacking.

7. DITCH BACKFILL AND COMPACTION

7.1 Upon completion of the installation of the pipe and locator wire, the trench shall be backfilled. This backfill material shall be compacted and mounded over the ditch line such that any settlement which occurs will not leave a depression along the ditch line. The contractor will be responsible for dressing up any areas of the ditch on which any settlement occurs.

8. TESTING

8.1 Prior to pressure testing, the lines shall be thoroughly flushed, disinfected, and satisfactory bacteriological samples obtained. All lines shall be pressure tested at a minimum pressure of 150 PSI, and the duration of each pressure test shall be 6 hours. The allowable leakage for all lines shall be in accordance with AWWA Standard C=600-93 and C605-94.

8.2 A recording pressure gauge shall be used when testing for leakage.

8.3 The results of all pressure testing and bacteriological testing shall be submitted to the water system. The Water System Manager shall be notified a minimum of 48 hours prior to conducting any pressure tests to allow the system to schedule their personnel so they are available to witness all pressure tests.

9. MISCELLANEOUS

9.1 No water line shall be installed such that it comes into contact with any septic field lines or soil saturated with organic solvents or gasoline. If septic field lines or soil saturated with organic solvents or gasoline are encountered, the water line may be installed if an approved method of casing the water line is used to protect the water line from contamination. All shall be installed to ADEM specifications.

9.2 No new water lines shall be placed into service without the approval of the water system.

9.3 All fittings shall be installed with grip ring pipe restrainers.