

Section XIV

PRESSURE SEWER (FORCE MAIN)

MATERIALS FOR CONSTRUCTION

A. GENERAL

1. Unless otherwise noted or approved by the Hilton Head No. 1 Public Service District all materials shall be manufactured in the United States.

B. PIPE AND FITTINGS

1. Ductile-iron pipe and fittings (DIP):
 - a. Use Class 50: ANSI/AWWA C151/A21.51, and ASTM A377, latest revision.
 - b. Use mechanical or push-on joints: ANSI/AWWA C111/A21.11 as modified by ANSI/AWWA C151/A21.51.
 - c. Use rubber gaskets and lubricant: ANSI/AWWA C111/A21.11.
 - d. Use fittings with pressure rating of 150 psi: ANSI/AWWA C110/A21.10.
 - e. Lining:
 - 1) Amine cured Novalac Epoxy polymeric lining, 40 mils nominal thickness. Protecto 401 by Vulcan Painters, Birmingham, Alabama or Corrosion-Clad Polymer Lining No. 210 by Seauereisen Cements, Pittsburgh, Pennsylvania.
2. Polyvinyl chloride pipe and fittings (PVC):
 - a. 4" and above: ANSI/AWWA C900/AWWA C905, Table 2, Pressure Class 150, and ASTM D-2241, latest revision.
 - b. Use integral bell or coupling type with elastomeric gaskets.
 - c. Factory-install gaskets integral with the pipe.

- d. Use ductile iron fittings with pressure rating of 150 psi: ANSI/AWWA C110/A21.10.
 - 1) Lining per Part B.1.e. above.
- e. Provide adaptor glands, gaskets, etc. as required to accommodate any differences in pipe and fitting dimensions.
- f. Couplings:
 - 1) Ductile iron, Class 50, full length.

C. RESTRAINED JOINT PIPE AND FITTINGS

- 1. Provide restrained joint pipe and fittings on all piping at each fitting, including valve connections and on the pipe joints to a distance of 36' on each side of the fitting.
- 2. Ductile iron pipe and fittings:
 - a. Fittings:
 - 1) Provide for use with mechanical joint pipe and fittings.
 - 2) Provide "MEGALUG" as manufactured by EBAA Iron Sales, Inc. of Eastland, Texas.
 - b. Pipe:
 - 1) Provide retainer gaskets with stainless steel locking elements on the inner surface, for use with slip joint pipe.
 - i) Provide gaskets for 250 psi minimum working pressure.
 - ii) Provide gaskets conforming to ANSI/AWWA C111/A21.11.
 - iii) Approved gaskets are the Field Lok Gasket manufactured by U.S. Pipe and Fast-Grip Gasket manufactured by American Ductile Iron Pipe or approved equal.
- 3. PVC pipe and fittings:
 - a. Fittings:

- 1) Provide for use with mechanical joint fittings and PVC pipe.
 - i) Provide "Series 2000 PV" as manufactured by EBAA Iron Sales, Inc. of Eastland, Texas.
- b. Pipe:
 - 1) Provide for use with PVC pipe bells.
 - i) Provide "Series 1600" as manufactured by EBAA Iron Sales, Inc. of Eastland, Texas.

D. AIR RELEASE AND VACUUM VALVES

1. Single body universal type with compound lever system.
2. Internal linkage and float of stainless steel.
3. Provide the following:
 - a. 2" inlet.
 - b. 2" stainless steel T-handle ball valve.
 - c. 1" blowoff stainless steel T-handle ball valve.
 - d. Quick disconnect couplings.
 - e. Back flushing hose.
 - f. "Protectop" cover.
 - g. Piping, nipples, plugs, etc.: Schedule 40, type 316 stainless steel.
4. Use short body valves where height restricts the use of long body valves.
5. Acceptable product: Multiplex Manufacturing Co., Crispin Model US20B Sewage Valve.
6. Valve vault:
 - a. Use lined vault wall sections.

- 1) Use high-density polyethylene (HDPE) concrete protective liner or epoxy coating complying with Section X.
- b. Provide aluminum access hatch per Section X.
 - 1) Acceptable manufacturer: Halliday.
- c. Comply with Detail XVI-1.

E. PLUG AND CHECK VALVES

1. Refer to Section XVIII for valve specifications.

F. METALLIC DETECTION TAPE

1. Use 2" wide metallic detection tape on all buried PVC piping.
 - a. 5.0 mil overall thickness.
 - b. No less than a 50 gauge solid aluminum foil core.
 - c. Visible from both sides.
 - d. No inks or printing extended to the edges of the tape.
 - e. Encase printing to avoid ink rub-off.
 - f. Tensile strength - 28 lbs/inch.
 - g. Use heat set mylar inks.
2. Color: safety green.
3. Wording on tape to indicate pipe contents and repeated a minimum of every 24".

G. CONCRETE FOR THRUST BLOCKING

1. 3000 psi.