**Fittings.** Ductile Iron compact fittings conforming to the requirements of AWWA C-153/A21.53-84 for mechanical joint sizes 3" through 16". Fittings shall be cement mortar lined in accordance with AWWA C104-80. The inside and outside of the fitting shall be bituminous coated. Nuts and bolts shall conform to the provisions of ANSI specifications B18.2 and otherwise conforming to fittings mentioned on sheet W-15.

## **RESILIENT SEATED GATE VALVES**

Resilient seated gate valves (sizes 3" through 20") shall be of the iron body, non-rising stem, resilient seat type as per AWWA Standard C509-94.

Valves shall open left and be provided with 2-inch square wrench nuts.

Valves shall have full opening flow-way of equal diameter as the nominal size of connecting pipe.

All internal ferrous metal surfaces shall be fully coated with epoxy as per AWWA C550, to protect all seating and adjacent surfaces from corrosion and prevent build up of scale or tuberculation.

Valves shall have two O-ring stem seals.

Valves shall be so designed that complete ZERO leakage may be affected with flow in either direction at pressures up to 200 psi, which shall be working water pressure rating of the valves and they shall be suitable for throttling if required.

## **PVC WATER MAIN**

Polyvinyl chloride (PVC) water main shall be white and conform to the provisions of AVWVA C900-89 Class 150 with elastomeric joints. Distribution mains less than 12" in diameter can be installed as alternative to ductile-iron pipe except in ground water and soil contaminated areas, in major intersections and arterial streets, under railroads, or in other locations prohibited by the City Engineer. All water services shall utilize saddles. All PVC water mains shall be installed only with continuous, full time City inspection. This requires extra inspection deposit above that required for ductile-iron water main. PVC main installed without a City inspector present shall be subject to re-exposure and re-backfilling. Type of saddle to be used shall be C-900 9.05 for 8", C-900 11.10 for 10" and C-900 6.90 for 6".

## TRACER TAPE

The City is changing from Tracer wire to Tracer Tape as the standard. Metallic Tracer/Warning Tape shall be placed in all Water, Sewer and Storm Drain pipe trenches. Tape shall be placed 12-inches above the top of the pipe. Tape shall be industrial standard product of approved quality with the type of utility ("Water", "Sewer" and "Storm Drain") labeled continuously on the tape.

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|------------------------------------|---------------------------------------|--------|---------------------|----|
| ENGINEERING DEPARTMENT             |                                       |        | CITY OF MERCED, CA. |    |
| WATER SYSTEM - APPROVED ALTERNATES |                                       |        | W-16A               |    |
| DATE: 4/02                         | Mark L. Juchen                        | 4/4/06 |                     |    |
| REVISED: 3/06                      | CITY ENGINEER                         | 777    | SHEET               | OF |