

**MATERIAL SPECIFICATIONS**

- A.** WATER MAIN SHALL BE AWWA C909 DR-18 CL 150 OR AWWA C-151 DUCTILE IRON PIPE CLASS 53, WITH SLIP-ON JOINTS AND RUBBER GASKETS.
- B.** BELL JOINT RESTRAINTS – USE FIELD LOCK BY U.S. PIPE OR APPROVED EQUIVALENT.
- C.** MECHANICAL JOINT RESTRAINTS – EBAA IRON MEGALUG RETAINER GLAND OR EQUIVALENT.
- D.** FIRE HYDRANTS – CLOW EDDY OR EQUIVALENT; MECHANICAL JOINT; TWO 2-1/2" HOSE NOZZLES, WITH NATIONAL STANDARD THREAD CONNECTIONS; ONE 4" 1.D AND 4-1/2" O.D., 6 THREADS PER INCH PUMPER NOZZLE NOT NATIONAL STANDARD THREADS; CONFORMING TO AWWA; CW TO OPEN; NON DRAINING; BREAK FLANGES 3" ABOVE GRADE.
- E.** GATE VALVES (THRU 10") – AWWA C-509, RESILIENT WEDGE, NON-RISING STEM, MECHANICAL JOINT, 150 PSI WORKING PRESSURE, CW TO OPEN, OPEN RIGHT WITH ARROW INDICATING OPEN DIRECTION.
- F.** VALVE BOXES – 3-PIECE CAST IRON 6" DIAMETER NOMINAL, ADJUSTABLE SCREW TYPE, COVER MARKED "WATER", DOMESTIC MADE ONLY.
- G.** SERVICE LINE FROM MAIN TO METER PIT OR CURB STOP – REHAU-MUNICIPLEX SDR 9 CTS OR APPROVED EQUIVALENT.
- H.** SERVICE LINE FROM METER PIT OR CURB STOP TO INSIDE BUILDING – TYPE "K" COPPER TUBE WITH COMPRESSION TYPE FITTINGS; BLUE OR BLACK WITH BLUE STRIPE HDPE TYPE SDR 9 CTS (200 PSI RATING) OR REHAU-MUNICIPLEX SDR 9 CTS OR EQUIVALENT.
- I.** CURB STOP – BRASS CONFORMING TO AWWA C-800.
- J.** CURB BOXES – 2-1/2" SCREW TYPE, BUFFALO STYLE CAST IRON LID WITH PENTAGON HEAD PLUG EM2-45-67.
- K.** ALL SERVICE CONNECTIONS REQUIRE A METER.
- L.** VALVE SIZING
  - 6" TO AND INCLUDING 10" TO BE A GATE VALVE
  - 12" AND LARGER TO BE A BUTTERFLY VALVE OPEN RIGHT
- M.** ALL PLASTIC WATER MAIN AND SERVICES SHALL BE INSTALLED WITH BLUE 12ga COPPERHEAD HS REINFORCED TRACER WIRE MANUFACTURED BY COPPERHEAD INDUSTRIES, LLC. BLUE FOR WATER. CONNECTORS FOR SERVICES OR SPLICES SHALL BE LOCKING BLUE "SNAKEBITE" CORROSION PROOF WIRE CONNECTORS MANUFACTURED BY COPPERHEAD INDUSTRIES, LLC.

**HYDROSTATIC TEST**

- A.** AFTER THE PIPE HAS BEEN LAID AND BACKFILLED, ALL NEWLY LAID PIPE OR VALVED SECTION, SHALL BE SUBJECTED TO HYDROSTATIC PRESSURE AND LEAKAGE TEST. ALL WATER MAINS MUST BE HYDROSTATICALLY TESTED (AWWA C-600). THE TESTS MUST BE PERFORMED BY THE CONTRACTOR IN THE PRESENCE OF A REPRESENTATIVE OF THE CITY OF SIDNEY. THE LEAKAGE TEST PRESSURE SHALL BE NOT LESS THAN 150 PSI. THE DURATION OF THE LEAKAGE TEST SHALL NOT BE LESS THAN 1 HOUR. HYDROSTATIC PRESSURE SHALL BE APPLIED BY MEANS OF A PUMP TAKING WATER FROM AN AUXILIARY SUPPLY. ALL PIPING MUST BE PROPERLY FILLED AND FLUSHED TO DISPEL ALL AIR BEFORE THE TEST IS MADE USING POTABLE WATER.
- B.** LEAKAGE IS DEFINED AS THE QUANTITY OF WATER TO BE SUPPLIED INTO THE NEWLY LAID PIPE, OR ANY VALVED SECTION THEREOF, NECESSARY TO MAINTAIN THE SPECIFIED LEAKAGE TEST PRESSURE AFTER THE PIPE HAS BEEN FILLED WITH WATER AND THE AIR EXPELLED.
- C.** DURING THE HYDROSTATIC TEST, A THOROUGH EXAMINATION OF ALL PIPING, FITTINGS, VALVES, HYDRANTS, ETC. SHALL BE PERFORMED. LEAKING JOINTS SHALL BE TIGHTENED AND THE TEST SHALL BE REPEATED UNTIL SATISFACTORY RESULTS ARE OBTAINED. CRACKED OR OTHERWISE DEFECTIVE MATERIAL SHALL BE REMOVED AND REPLACED AND THE TEST SHALL BE REPEATED UNTIL SATISFACTORY RESULTS ARE OBTAINED.

**DISINFECTION**

- A.** AFTER SATISFACTORY HYDROSTATIC TESTING, THE COMPLETED WATER WORK SHALL BE DISINFECTED IN ACCORDANCE WITH AWWA C-651 BY CITY OF SIDNEY WATER DEPARTMENT.
- B.** MAINTAIN PIPES FREE OF DIRT AND FOREIGN MATTER DURING CONSTRUCTION BY DEWATERING TRENCH AND SEALING OPEN PIPE BARRELS. THIS IS ALSO A REQUIREMENT IF REPAIRS OCCUR.
- C.** FLUSH CHLORINE SOLUTION TO WASTE INTO SANITARY SEWER AT A CONTROLLED RATE, NOT TO EXCEED 25 GPM. IF CHLORINE RESIDUAL DROPS IN 10 MG PER LITER, FLUSH MAIN AT 2 FPS AND REPEAT STERILIZATION PROCEDURE.
- D.** WATER SAMPLES – PERFORM BACTERIOLOGICAL TEST PER AWWA C-651. THIS TEST WILL BE PERFORMED BY THE CITY. TWO CONSECUTIVELY NEGATIVE RESULTS WILL CONSTITUTE A PASSABLE TEST. THE CONTRACTOR SHALL FURNISH ALL REQUIRED TESTING APPENDAGES OR EXCAVATION NEEDED BY THE CITY.

**ALLOWABLE LEAKAGE PER 1000 FT. (305M) OF PIPELINE (GPH+)**

AVG. TEST PRESSURE (PSI) BAR	6	8	10	12	14	16	18	20	24	30
250(17)	0.71	0.95	1.19	1.42	1.66	1.90	2.14	2.37	2.85	3.56
225(16)	0.68	0.90	1.13	1.35	1.58	1.80	2.03	2.25	2.70	3.38
200(14)	0.64	0.85	1.06	1.28	1.48	1.70	1.91	2.12	2.55	3.19
175(12)	0.59	0.80	0.99	1.19	1.39	1.59	1.79	1.98	2.38	2.98
150(10)	0.55	0.74	0.92	1.10	1.29	1.47	1.66	1.84	2.21	2.76
120(9)	0.50	0.67	0.84	1.01	1.18	1.34	1.51	1.68	2.01	2.52



**CITY OF  
SIDNEY**

**WATER MAIN MATERIAL AND TESTING**

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