1. PART 1 – GENERAL

1.1 References

.1 ANSI/ASME B16.15-1985, Cast Bronze Threaded Fittings, Classes 125 and 250.
.2 ANSI/ASME B16.18-1984, Cast Copper Alloy Solder Joint Pressure Fittings.
.3 ANSI/ASME B16.22-1989, Wrought Copper and Copper Alloy Solder Joint Pressure Fittings.
.4 ANSI/ASME B16.24-1979, Cast Copper Alloy Pipe Flanges and Flanged Fittings, Class 150, 300, 400, 600, 900, 1500 and 2500.
.5 ANSI/AWWA C111/A21.1-1985, Rubber-Gasket Joints for Ductile-Iron Pressure Pipe and Fittings.
.6 ASTM A 307-89, Standard Specification for Carbon Steel Bolts and Studs, 60,000 PSI Tensile Strength.
.7 ASTM B 88M-89, Standard Specification for Seamless Copper Water Tube (Metric).
.8 ASTM F 492-91, Standard Specification for Propylene and Polypropylene (PP) Plastic-Lined Ferrous Metal Pipe and Fittings.
.9 CSA B242-M1980, Groove and Shoulder Type Mechanical Pipe Couplings.
.10 MSS-SP-67-1990, Butterfly Valves.
.11 MSS-SP-70-1984, Cast Iron Gate Valves, Flanged and Threaded Ends.
.12 MSS-SP-71-1984, Cast Iron Swing Check Valves, Flanged and Threaded Ends.
.13 MSS-SP-80-1097, Bronze Gate, Globe, Angle and Check Valves.

1.2 Submittals

.1 Submit Product Data in accordance with Section 230500E – Common Work Results for Mechanical.

1.3 Documentation/items to submit upon work termination

.1 Provide maintenance data for incorporation into manual specified in Section 230500E – Common Work Results for Mechanical.

2. PART 2 – PRODUCTS

2.1 Piping

.1 Domestic hot, cold and recirculation systems, within building, to:
« M1a : Domestic hot and cold water supply piping, above ground.

2.2 Globe valves

.1 NPS2 and under, soldered:
  .1 To MSS-SP-80, Class 125, 860 kPa, bronze body, renewable composition disc, screwed over bonnet.
  .2 Lockshield handles: as indicated.
  .3 Acceptable product: Crane, Jenkins, or Kitz.
.2 NPS 2 and under, screwed:
  .1 To MSS-SP-80, Class 150, 1 MPa, bronze body, screwed over bonnet, renewable composition disc.
  .2 Lockshield handles: as indicated.
  .3 Acceptable product: Crane, Jenkins, or Kitz.

3. PART 3 – EXECUTION

3.1 Installation

.1 Install in accordance with Canadian Plumbing Code and local authority having jurisdiction.
.2 Cut piping square, free from foreign matter, trim and clean ends; clean fitting sockets; join items without pinching.
.3 Assemble piping using fittings manufactured to ANSI standards.
.4 Install piping near walls and ceilings so as to minimize usable space reduction in rooms. Bundle exposed piping and install piping parallel to walls.
.5 Connect to fixtures and equipment in accordance with manufacturer's written instructions unless otherwise indicated.

3.2 Valves

.1 Isolate equipment, fixtures and branches with butterfly or ball valves as indicated.
.2 Balance recirculation system using lockshield globe valves. Mark settings and record on as-built drawings on completion.

3.3 Pressure tests

.1 Conform to requirements of Section 230500E – Common Work Results for Mechanical.
.2 Test pressure: greater of 125 PSI or 1.5 times the maximum service pressure.

3.4 Disinfection

.1 Flush out, disinfect and rinse system to approval of Departmental Representative.

3.5 Piping standards

	DIAMETER (NPS)		MATERIAL	SPECIFICATIONS	STANDARDS
	TO	FROM			
PIPE	3/8	3	Copper, hard drawn, type "L"	Hard drawn copper tube	ASTM B.88M
ASSEMBLIES	3/8	3	Lead free	Solder, 95% tin, 5% antimony Easy Flo #45, SilFos, 13% Handy and Harman Flux	ANSI A5.8
FITTINGS	3/8	4	Cast copper Cast bronze	Brazing Screwing	ANSI B.16.22 ANSI B16.15
FLANGES	2½	4	Cast iron 860 kPa	Screwed with copper adapter	ASTM A-47
UNION	3/8	2	Brass 860 kPa	Brazing	ANSI B.16.22
BOLTS	With nuts and washers				ASTM A 307
PACKING	Rubber 0.06" thick, OR EPDM				ANSI / AWWA C111/A21.11

VALVES	DIAMETER (NPS)		CLASS WOG water pressure	SPECIFICATIONS
	FROM	TO	kPa	
GLOBE	3/8 2½	2 4	1780	Grinnell 171 M full flow with stem extension, Watts B-6000, Victaulic or Newman Hattersley
CHECK	3/8 4	3 10	1780	Jenkins fig. 4092J, Kitz 29 Jenkins fig. 587 JA, Kitz 78
GATE	2½	--------	860	
BUTTERFLY	2½	--------	2070	Victaulic # 608, or equivalent, Jenkins 2222ELJ
STRAINER	3/8 2	2	2760 1207	Armstrong # A1SC - threaded, Hayward 80 or Sarco, FloFab Armstrong # A1FL - flanged, Hayward 80, JA, Kitz 80

NOTES: Dielectric connections between dissimilar metals: dielectric fitting to ASTM F492

DATE: 2006-03			DESIGN	SERVICE	TEST	
REV.: 0	N./P.:	PRESSURE kPa	860	690	1380	HYDRO-
		TEMP. °C	93	82	AMBIENT	STATIC
	PIPING AND VALVE STANDARDS	**DOMESTIC HOT AND COLD WATER SUPPLY PIPING, ABOVE-GROUND**			**SI**	**M-1a**