



Building Inspections

Isometric Plumbing Drawings

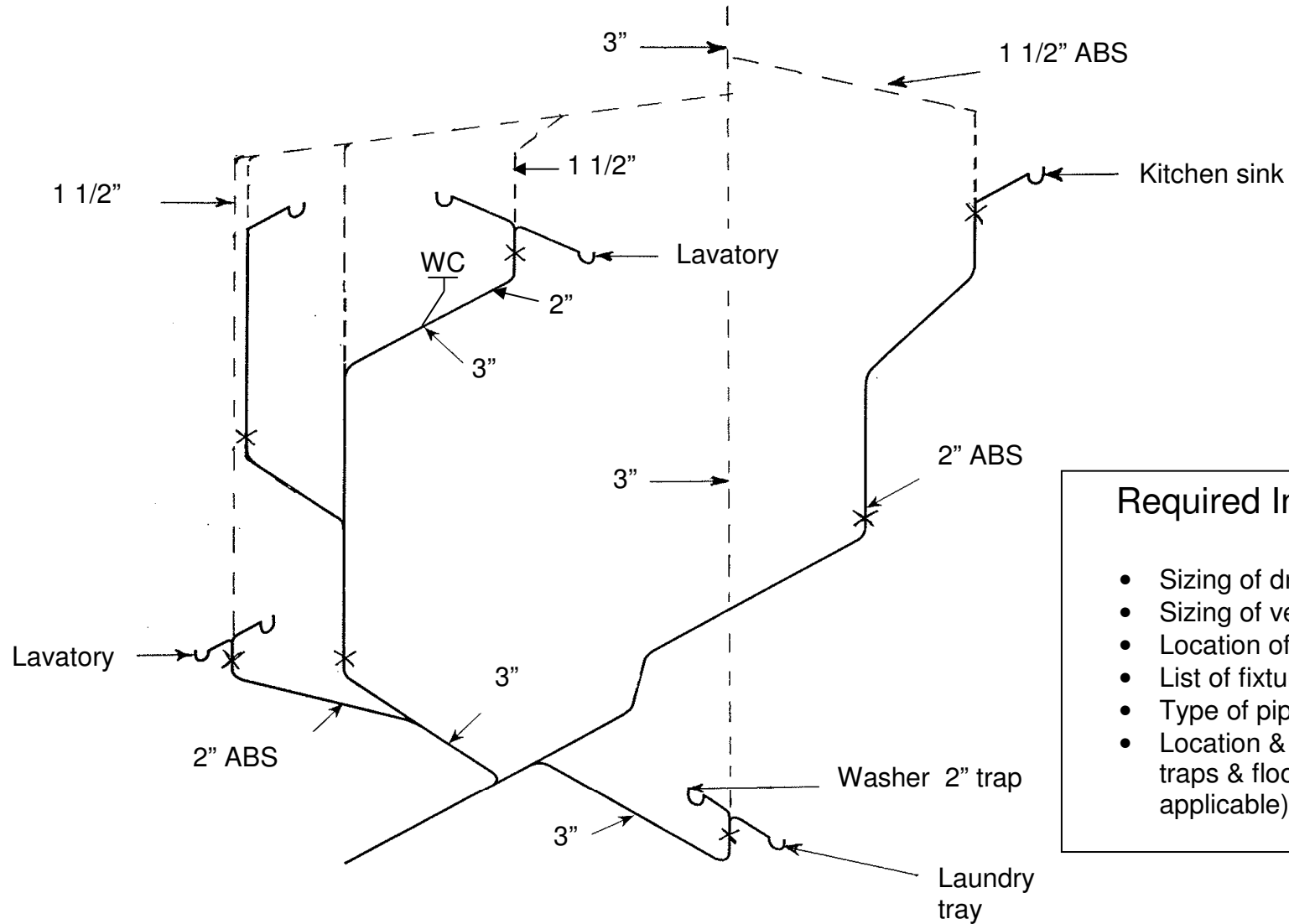
All commercial building permit applications, in which the plumbing system has not been designed by a mechanical engineer, must include two sets of isometric plumbing drawings.

The isometric drawings should include the following information:

1. Isometric drawings of drain, waste and vent (D.W.V.) must include the size, location and type of pipe.
2. Isometric drawings of hot and cold water piping must include the type and size of pipe and method used for sizing pipe.
3. The isometric drawings are to specify whether combustible or non-combustible plumbing is to be used. It is the responsibility of the designers to ensure the system complies with the BC Building Code requirements in Subsection 3.1.9. or 9.10.9.7., Fire Separations & Fire Rated Assemblies.
4. Grease traps must be installed in the plumbing system for restaurants and businesses that prepare food. The location and size of the grease interceptors must be included on the isometric drawing. For further information see the Building Inspections handout titled *Grease Interceptors in Kitchens*.
5. Isometric drawings to include the plumbing company name and contact phone number.

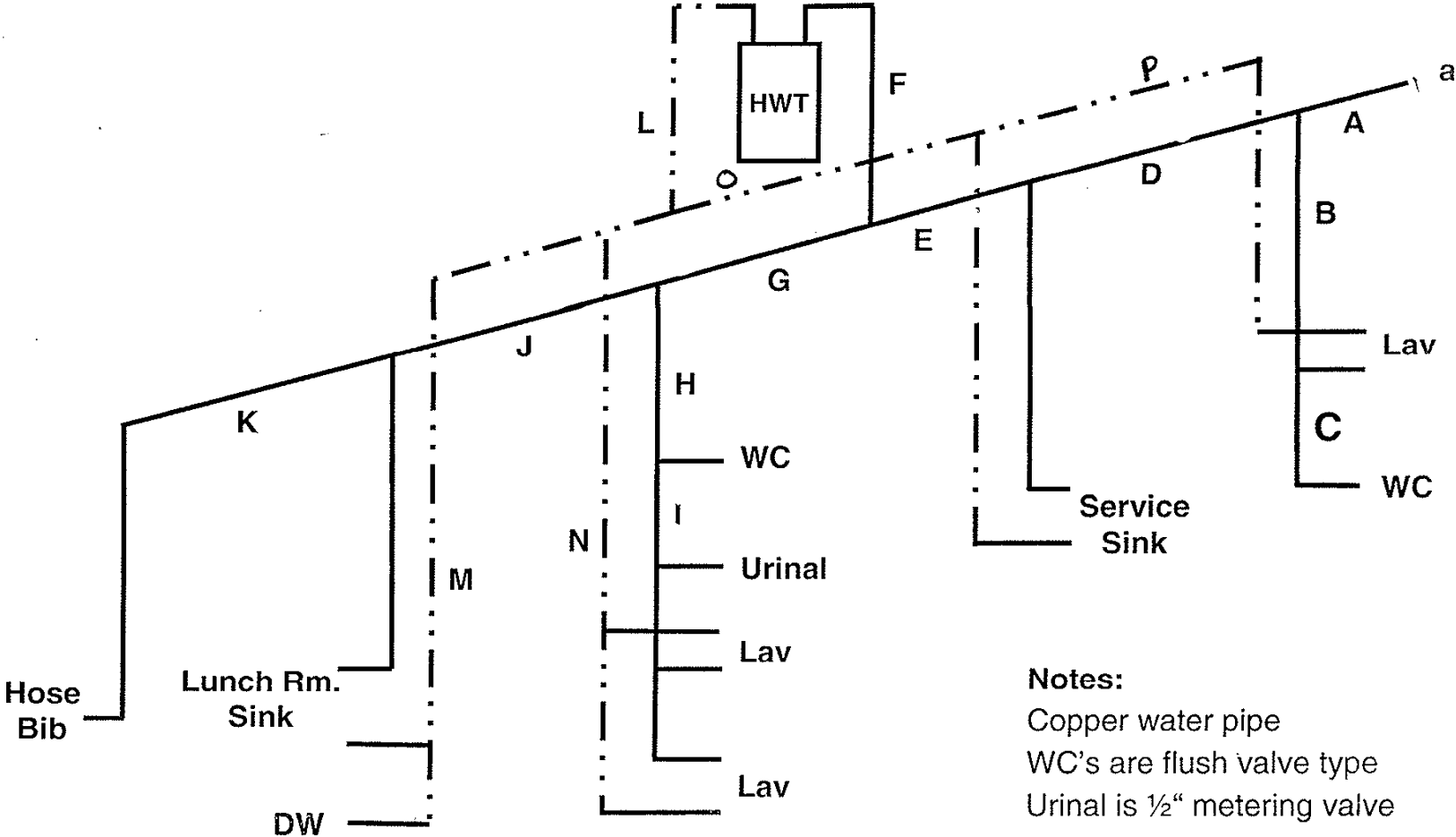
The isometric plumbing drawing approved by the City of Nanaimo must be supplied, on site, at the time of the Plumbing Inspector's inspection.

Example Drainage System – Isometric View



- Required Information**
- Sizing of drains
 - Sizing of vents
 - Location of cleanouts – X
 - List of fixtures
 - Type of piping
 - Location & size of grease traps & floor drains (where applicable)

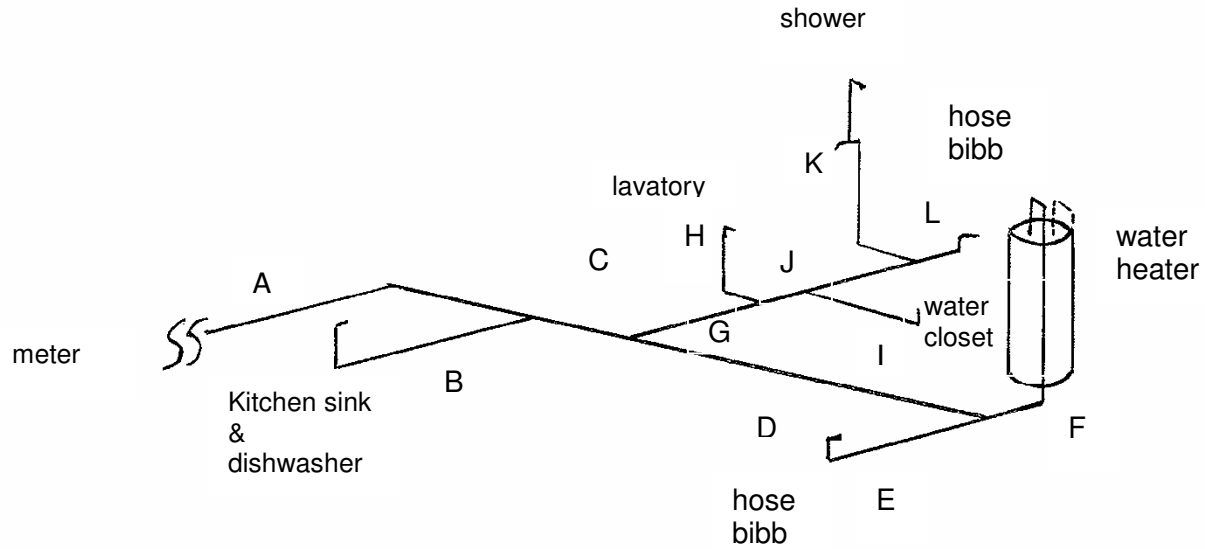
Example Commercial Water Piping - Isometric View



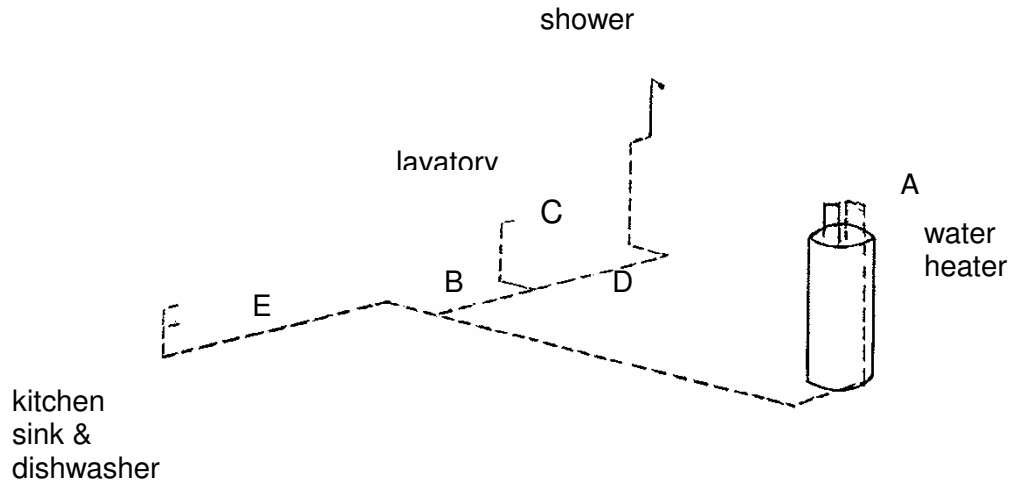
Notes:
 Copper water pipe
 WC's are flush valve type
 Urinal is 1/2" metering valve
 Lunch Rm. Sink & Dishwasher taken as domestic/private use

Example Residential Water Piping - Isometric View

Cold Water



Hot Water



Simplified Method SFD / Duplex

Total number of Water Supply Fixture Units

Fixture	WSFU	#	Total	Hot
BG	3.6	2	7.2	4.2
WC	2.2	2	4.4	-
LAV	0.7	2	1.4	1.4
BT	1.4	1	1.4	1.4
SH	1.4	1	1.4	1.4
K.S.	1.4	2	2.8	2.8
D.W.	1.4	2	2.8	2.8
C.W.	1.4	2	2.8	2.8
H.B.	2.5	2	5	-
WSP			29.2	16.8

Value of hot fixtures only in 2 bathroom groups

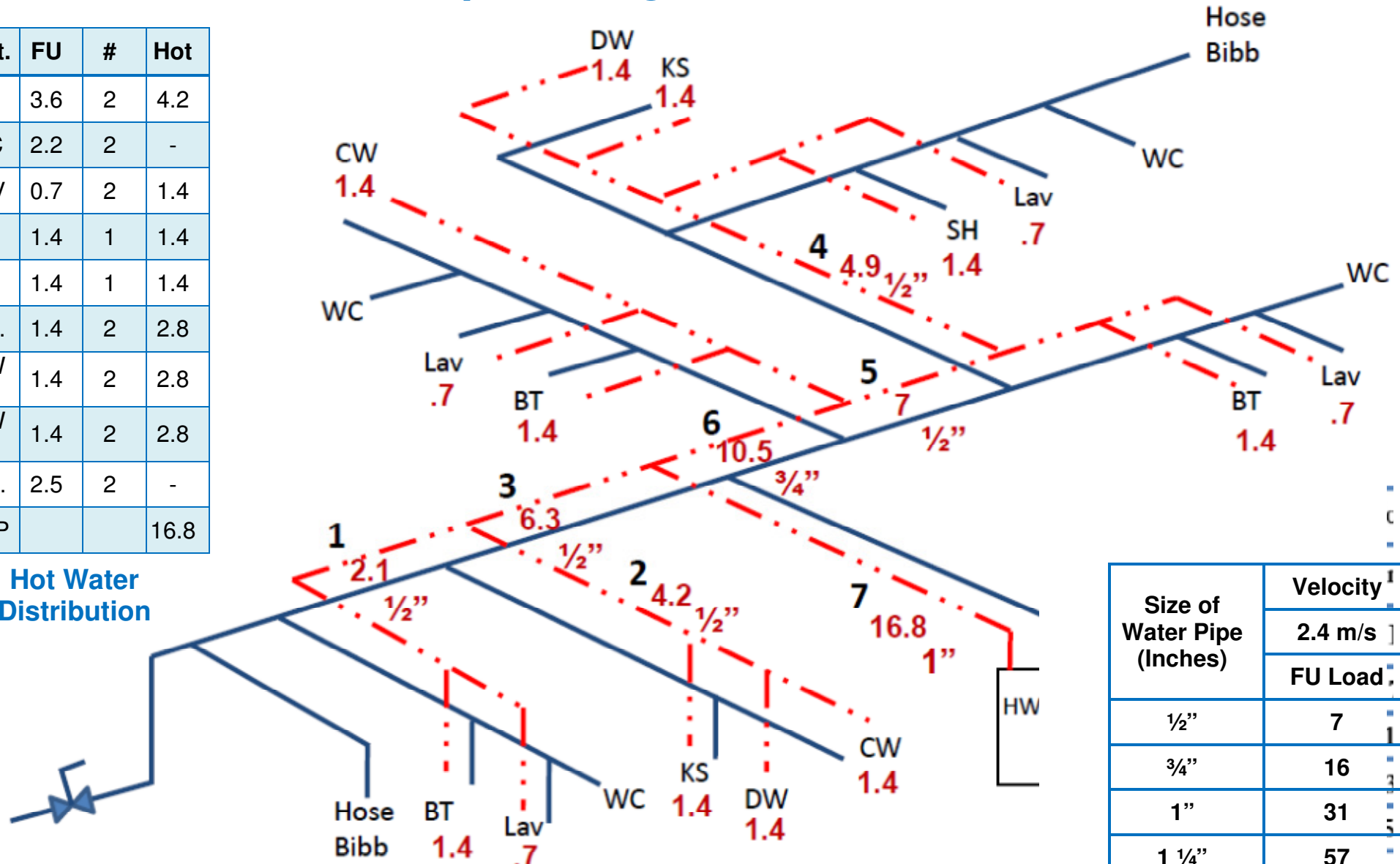
Taken from Tables 2.6.3.2.A., 2.6.3.2.B., 2.6.3.2.C. and 2.6.3.2.D.

Simplified Method SFD / Duplex

Introduction to Water Pipe Sizing – 2012 BCPC

Fixt.	FU	#	Hot
BG	3.6	2	4.2
WC	2.2	2	-
LAV	0.7	2	1.4
BT	1.4	1	1.4
SH	1.4	1	1.4
K.S.	1.4	2	2.8
D.W	1.4	2	2.8
C.W	1.4	2	2.8
H.B.	2.5	2	-
WSP			16.8

Hot Water Distribution



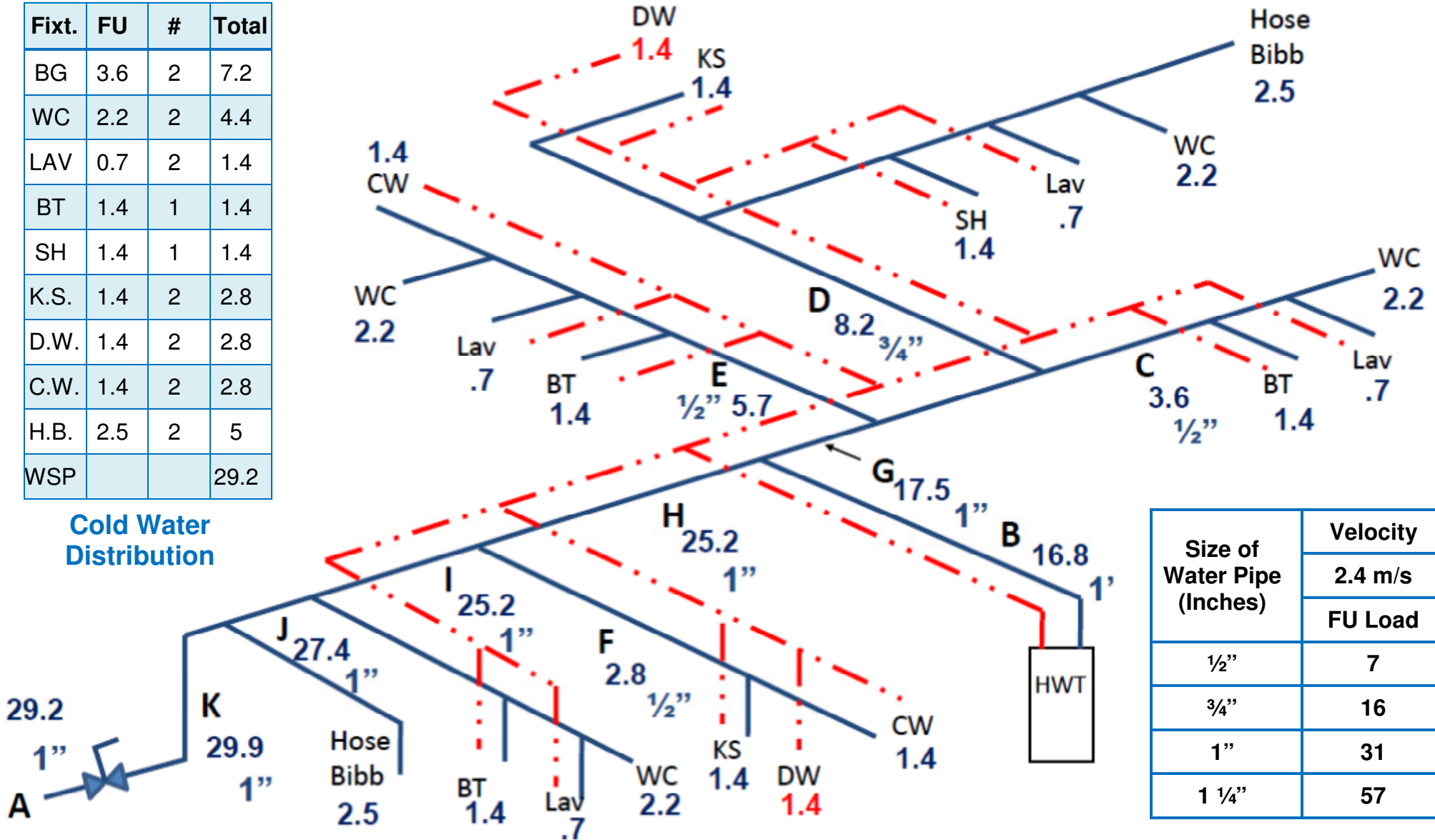
Size of Water Pipe (Inches)	Velocity
	2.4 m/s
	FU Load
1/2"	7
3/4"	16
1"	31
1 1/4"	57

Simplified Method SFD / Duplex

Introduction to Water Pipe Sizing – 2012 BCPC

Fixt.	FU	#	Total
BG	3.6	2	7.2
WC	2.2	2	4.4
LAV	0.7	2	1.4
BT	1.4	1	1.4
SH	1.4	1	1.4
K.S.	1.4	2	2.8
D.W.	1.4	2	2.8
C.W.	1.4	2	2.8
H.B.	2.5	2	5
WSP			29.2

Cold Water Distribution



Size of Water Pipe (Inches)	Velocity
	2.4 m/s
	FU Load
1/2"	7
3/4"	16
1"	31
1 1/4"	57

Water Pipe Sizing Worksheet

Single Family / Duplex / Row Housing

Company: _____
 Drawn by: _____
 Phone: _____

BP #: _____ Address: _____

Each unit having separate water service

Cold Fixture:
BATHROOM GROUP
 WC
LAV
 BT/SHOWER 1/2" SPOUT
 BT 3/4" SPOUT
SHOWER PER HEAD
 KITCHEN SINK
 DISHWASHER
 CLOTHES WASHER
 HOSE BIBB 1/2"
 HOSE BIBB 3/4"
 HOSE BIBB 3/4" H/C
 BAR SINK
 LAUNDRY TUB
 BIDET

F/Un		Num/of	Cold	Hot
Total		Fixtures	F/Un	F/Un
3.6	x			
2.2	x			
0.7	x			
1.4	x			
10	x			
1.4	x			
1.4	x			
1.4	x			
1.4	x			
2.5	x			
3	x			
2.5	x			
1	x			
1.4	x			
2	x			
	x			
	x			
	x			
	x			

PIPE	Cold		Hot	
	F/Un	SIZE	F/Un	SIZE
A				
B				
C				
D				
E				
F				
G				
H				
I				
J				
K				
L				
M				
N				
O				
P				
Q				
R				
S				
T				
U				

Items not listed	Hydraulic load	
	Private	Public
Supply		
3/8"	1	2
1/2"	2	4
3/4"	3	6
1"	6	10

SIZE	PEX
	2.4
1/2"	7
3/4"	16
1"	31
1 1/4"	57

TYPE OF PIPING		
		X
PEX		
COPPER		
OTHER		

COMMENTS: