

PLUMBING NC II

TRAINING LESSON 2



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TARGETS

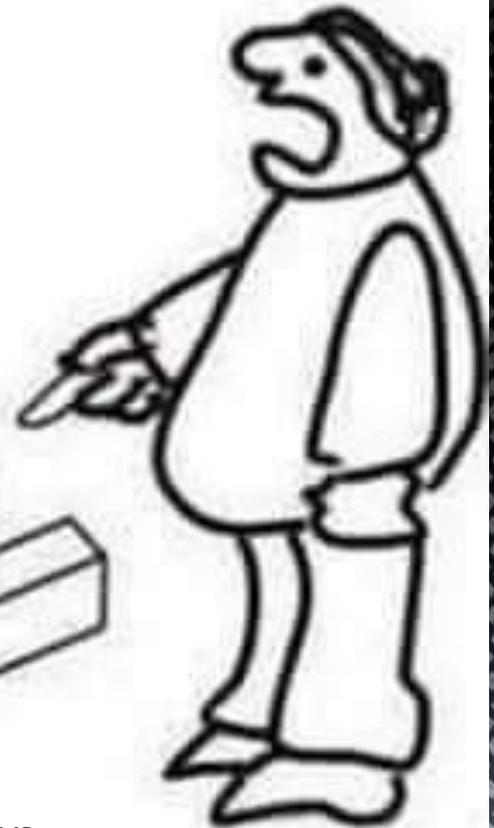
- Basic Trade Mathematics
- Pull Push Rule Reading
- Plumbing Signs and Symbols
- Application of Signs & Symbols
- Reading Water Distribution Layout
- Reading Storm and Sanitary Layout

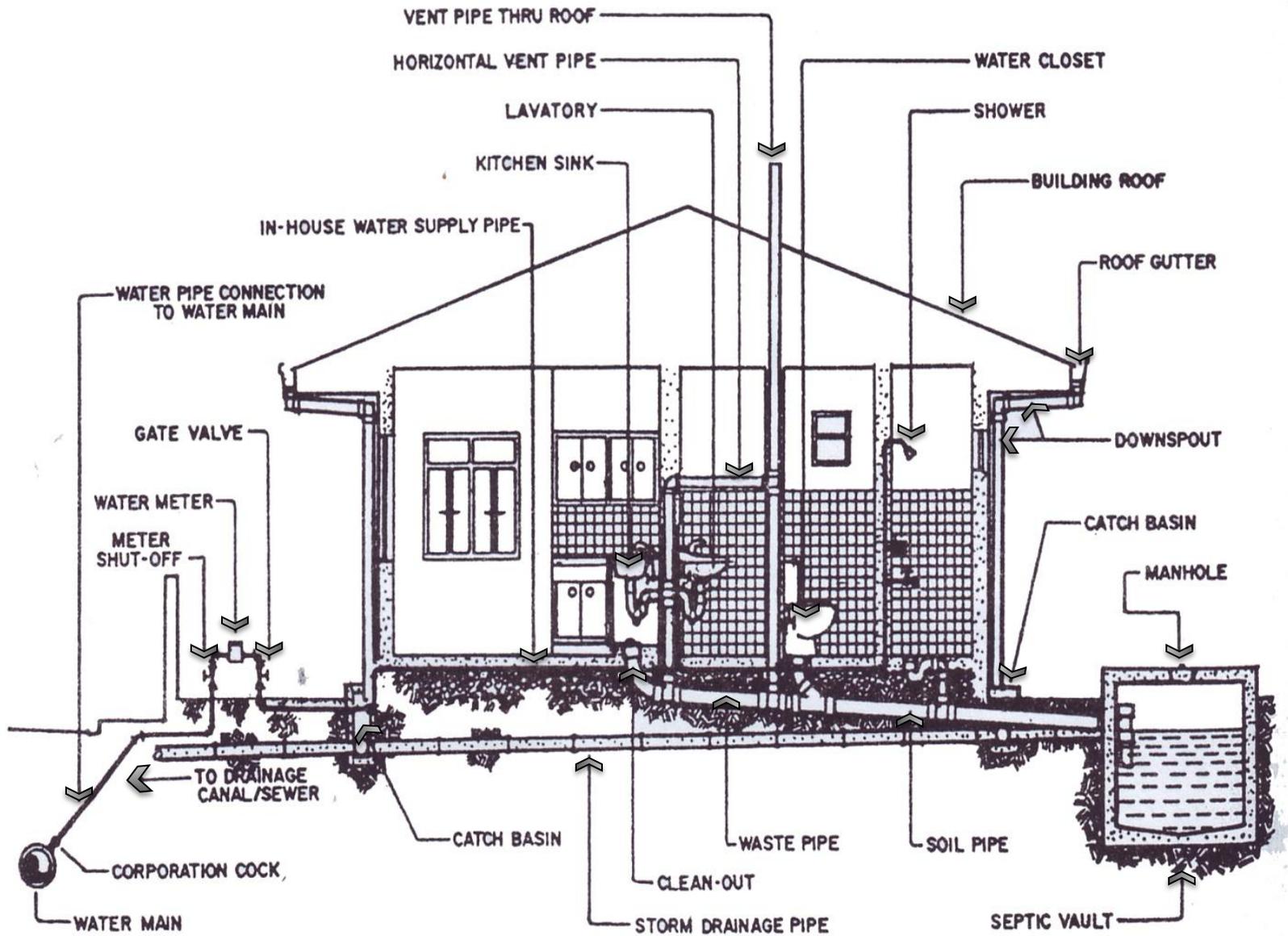
Alibaba

4 yan!

Muk Mafi

3 kaya yan





Prepared by: SUNNY B. OJEDA, RMP

1/6/2018

TRADE MATHEMATICS

❖ Basic Arithmetic

1. A plumber cuts three sections of uPVC 4" \emptyset pipe from a 3m standard length, the lengths of the sections are 0.54m, 1.22m and 0.10m. How long will be the remaining from the full length, if the saw cut is 3mm?
2. John's daily rate is ₱350, he worked for 2 weeks except for Sundays and received cash advance of ₱1500. How much will he receive in total?

❖ Basic Arithmetic

3. A 15m long ladder is set with its foot 5m from the house. How high on the house will it reach?

$$\text{Formula: } a = \sqrt{c^2 - b^2}$$

4. ₱4000 is borrowed for 75 days at 16% per annum in simple interest. How much will be the due at the end of 75 days?

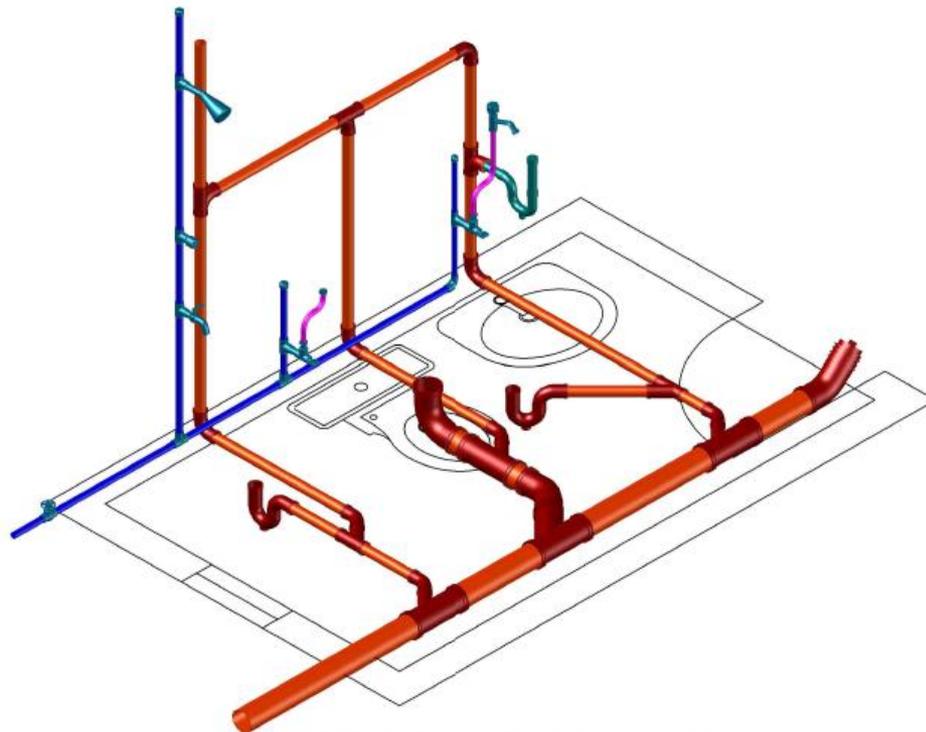
$$\text{Formula: } I = PIN \text{ and Due (F) = P + I}$$

5. A set of pipe threading machine cost ₱35,000 with an estimated life of 15 yrs and salvage value of ₱1,000. Find the book value after 6 years using straight line method?

$$\text{Formula: } \text{Dep} = \frac{C_o - C_n}{n} \text{ and } \text{BV} = C_o - D (\#yr)$$

❖ Basic Arithmetic

6. The plumber is laying pipes with the total length of 7.5 meters. What is the rise of the pipe in 2% inclination?
7. Greg is laying pipes with the total length of 9'-6". What is the rise of the pipe in 2% inclination?
8. Estimate the materials needed for the water installation project.



3D REPRESENTATION OF PLUMBING SYSTEM

PULL PUSH RULE READING

MULTI MARKING

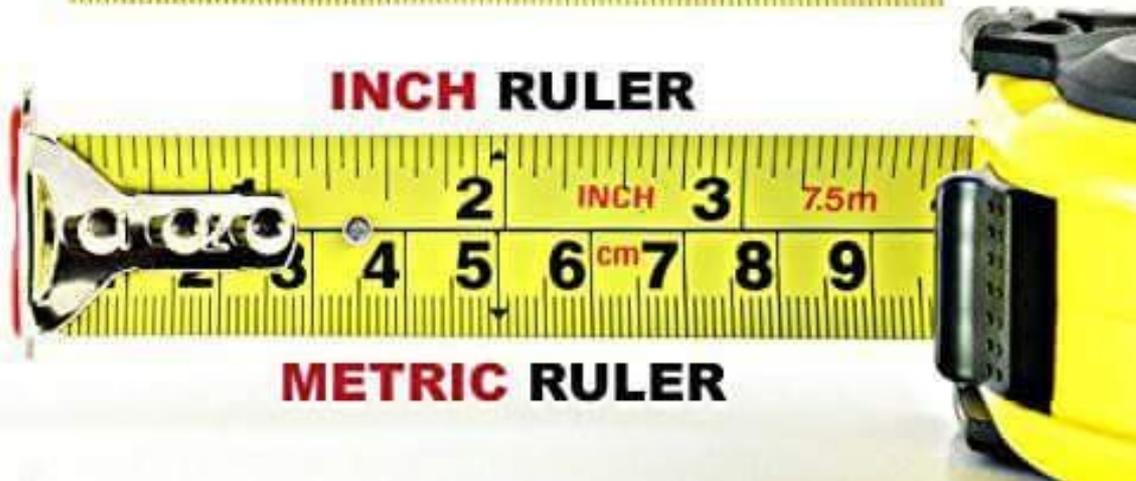
FEET MARKING



EVERY 16 INCH MARKING



INCH RULER



METRIC RULER

Measurement Conversions



LENGTH : Imperial to Metric

1 inch(in)	2.54cm	25.4mm
6 inches	15.24cm	152.4mm
1 Foot	30.48cm	304.8mm
1 Yard	91.44cm	914.4mm
1 Foot	30.48cm	0.3048m
6 Feet	182.88cm	1.828m
12 Feet	365.76cm	3.657m
30 Feet	914.40cm	9.144m
50 Feet	1524.00cm	15.240m

AREA : Imperial to Metric

1 yard ²	0.836 metres ²
2 yards ²	1.672 metres ²
5 yards ²	4.180 metres ²
10 yards ²	8.361 metres ²
25 yards ²	20.902 metres ²

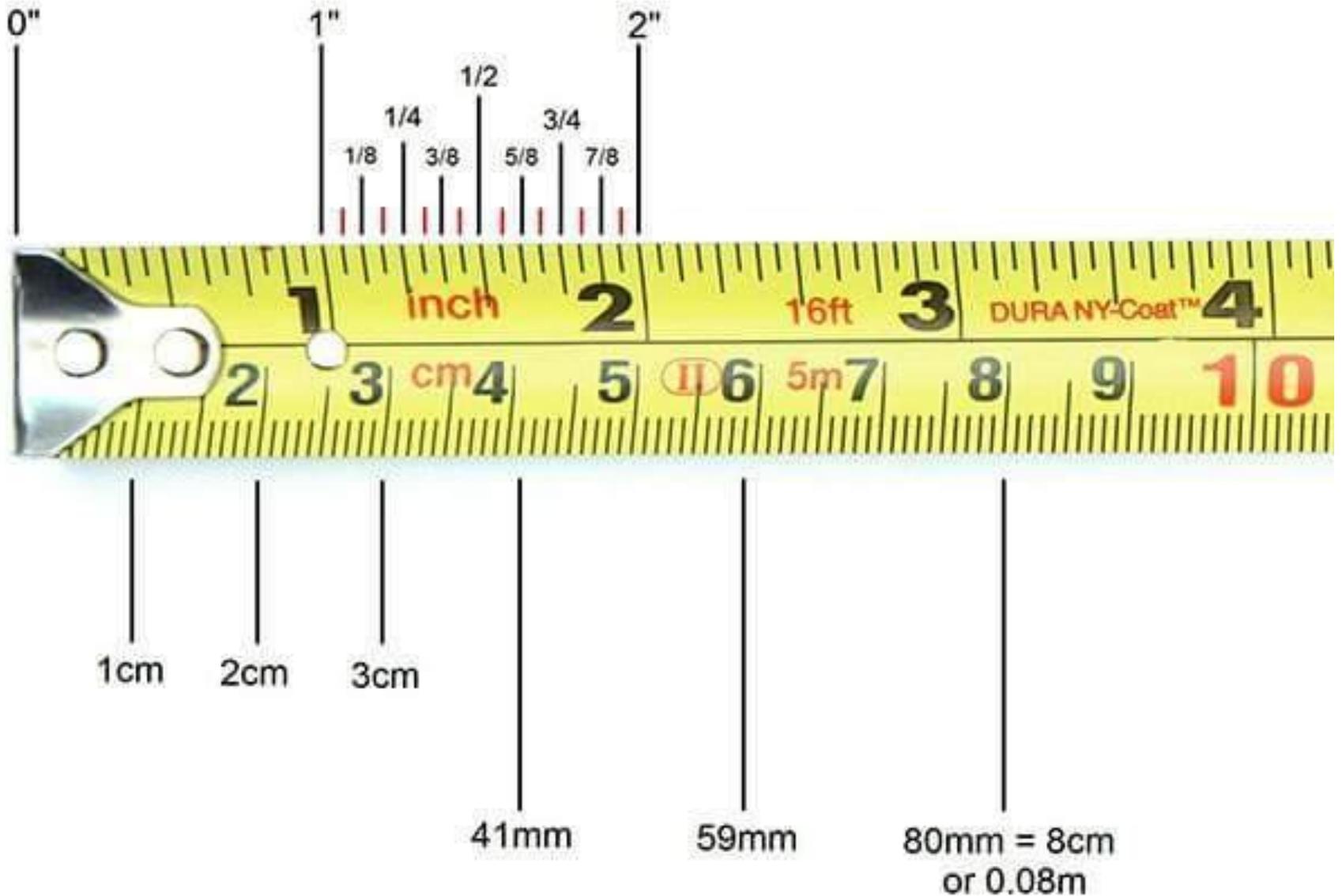
LENGTH : Metric to Imperial

1 centimetre	0.39370 in
5 centimetres	1.98850 in
10 centimetres	3.93700 in
1 metre	3.2808 ft
3 metres	9.8425 ft
5 metres	16.4042 ft
10 metres	32.8083 ft
15 metres	49.2120 ft
25 metres	82.0200 ft

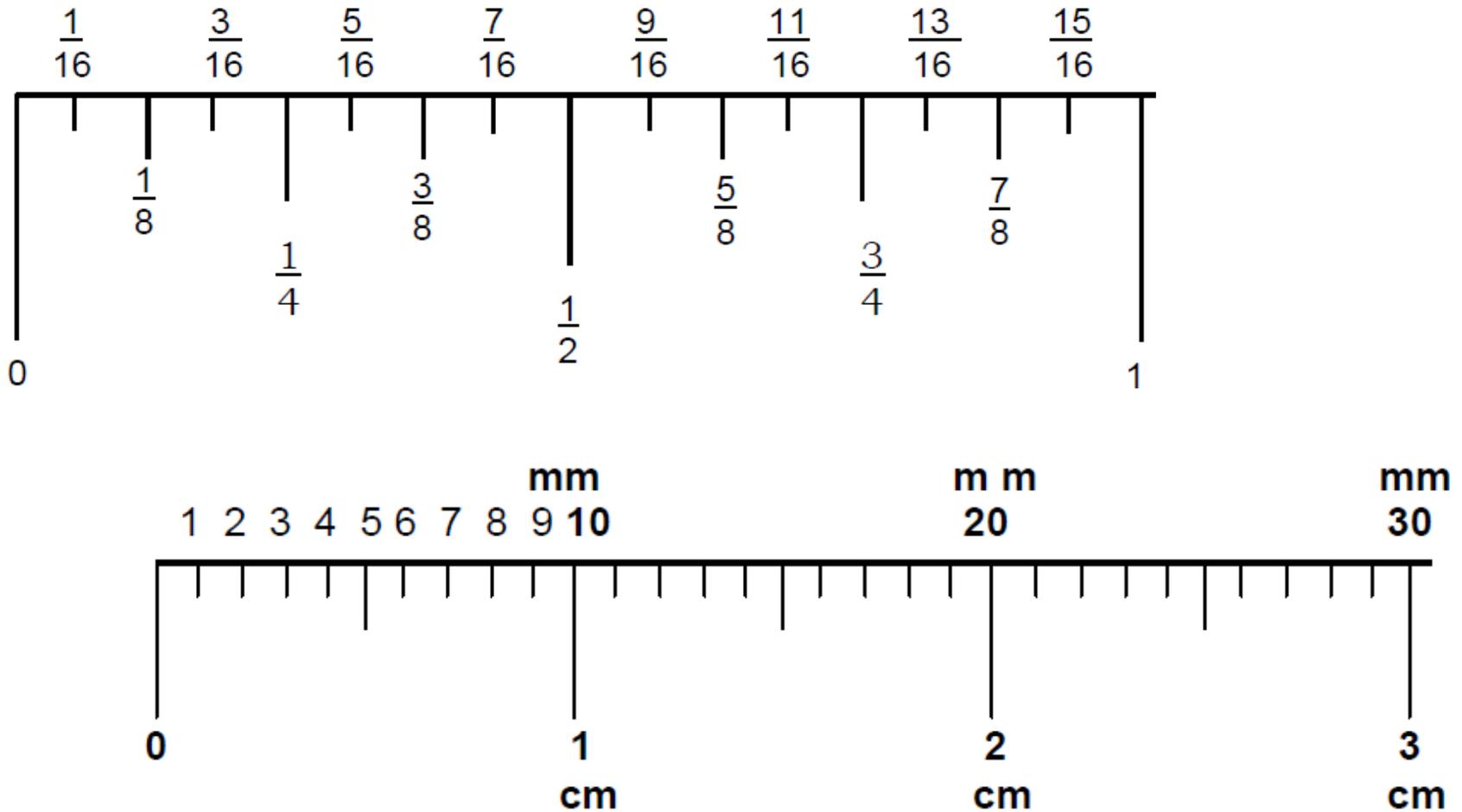
AREA : Metric to Imperial

1 metre ²	1.959 yards ²
2 metre ²	2.391 yards ²
5 metre ²	5.979 yards ²
10 metre ²	11.960 yards ²
25 metre ²	29.900 yards ²

PULL PUSH RULE READING

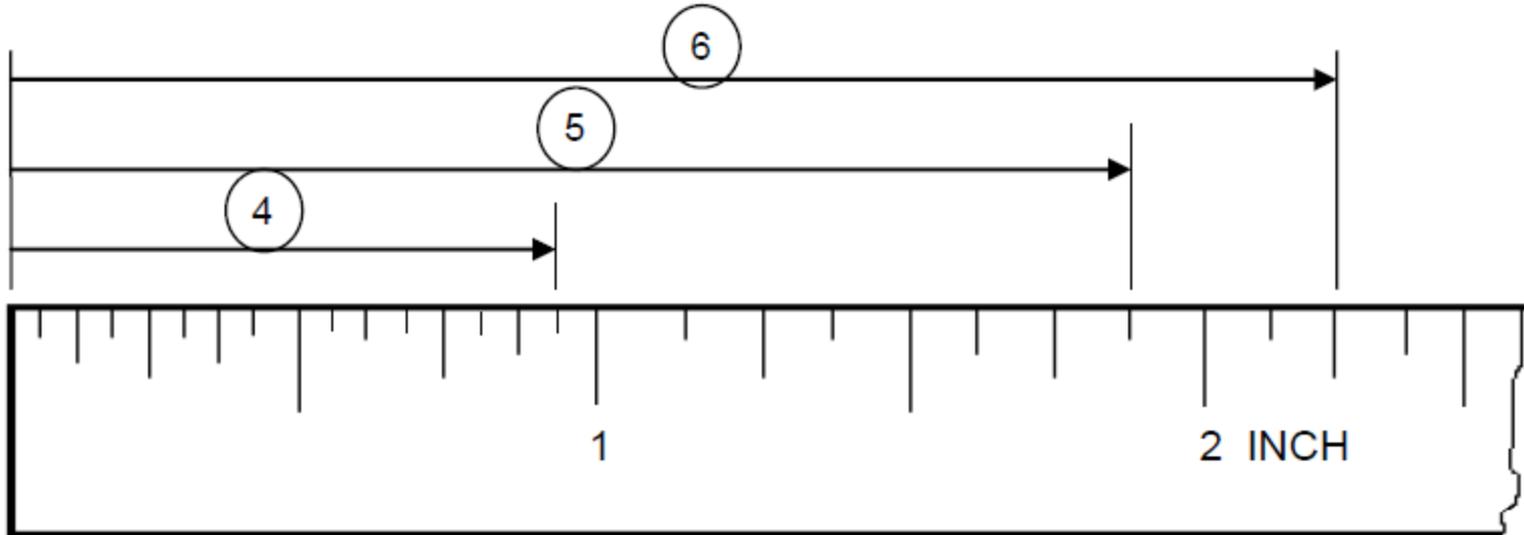
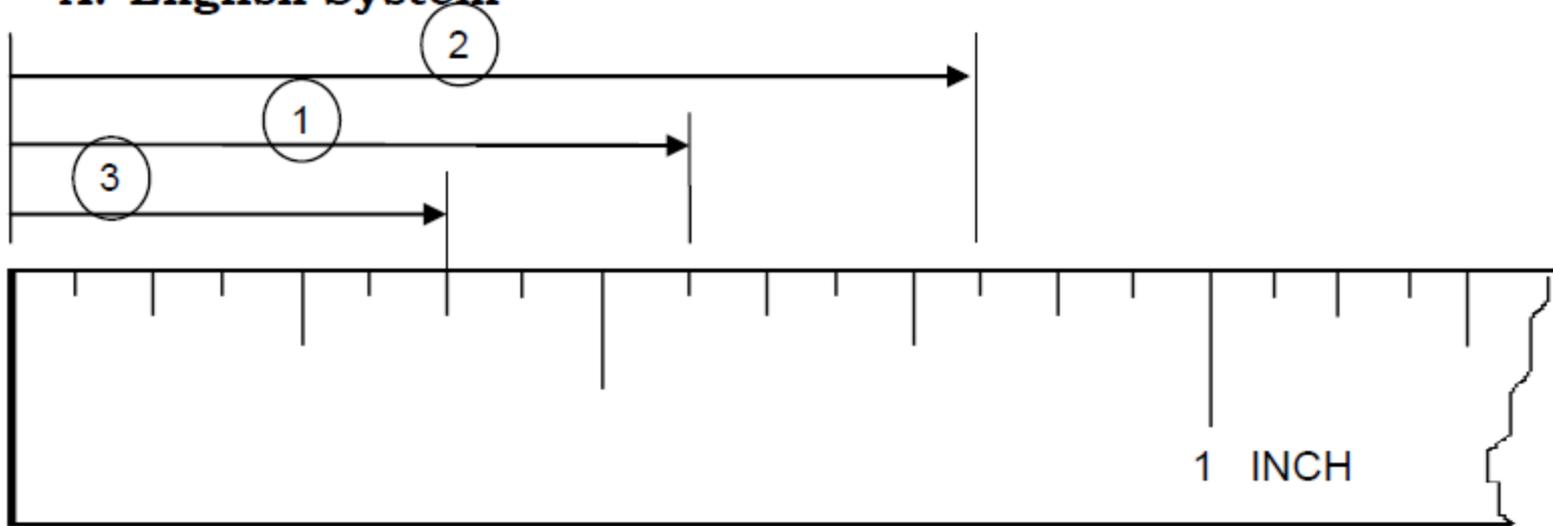


PULL PUSH RULE READING



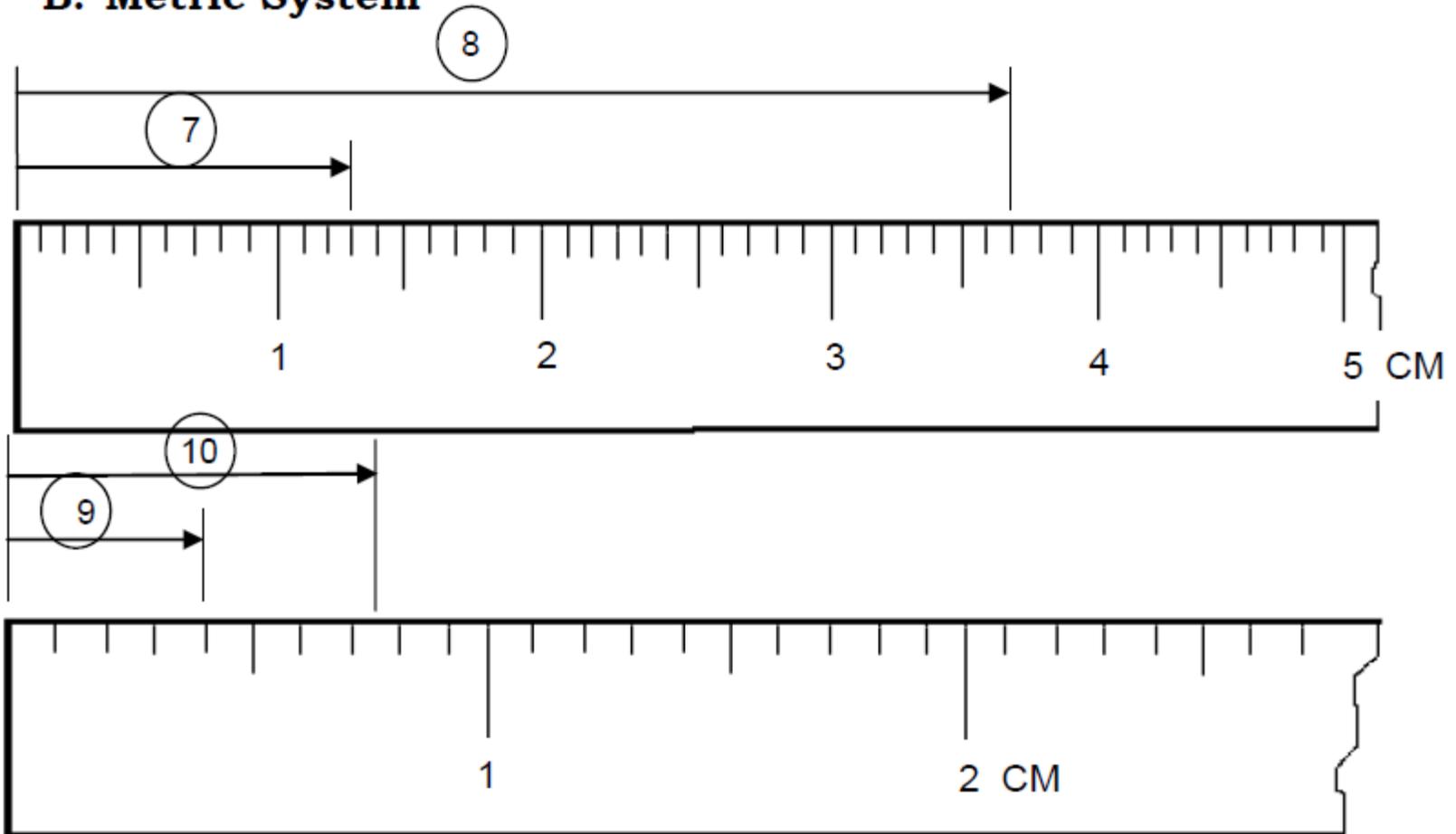
PULL PUSH RULE READING

A. English System



PULL PUSH RULE READING

B. Metric System



PLUMBING SIGNS AND SYMBOLS



CWL

COLD WATER LINE



HWL

HOT WATER LINE



GV

GATE VALVE NORMALLY OPEN



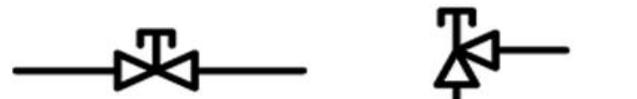
GV

GATE VALVE NORMALLY CLOSED



CV

CHECK VALVE



LSV

LOCK SHIELD VALVE



AV

ANGLE VALVE



ACC

AIR CHAMBER CAP



SV

SHOWER VALVE



CR

CONCENTRIC REDUCER



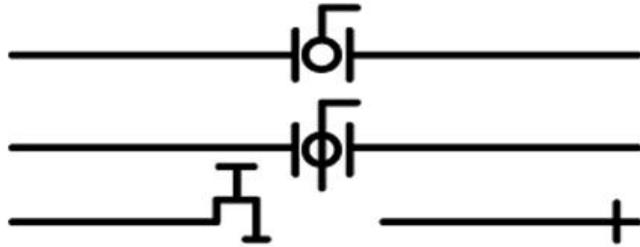
PRV

PRESSURE RELIEF/REDUCING VALVE



GLOBE VALVE

PLUMBING SIGNS AND SYMBOLS

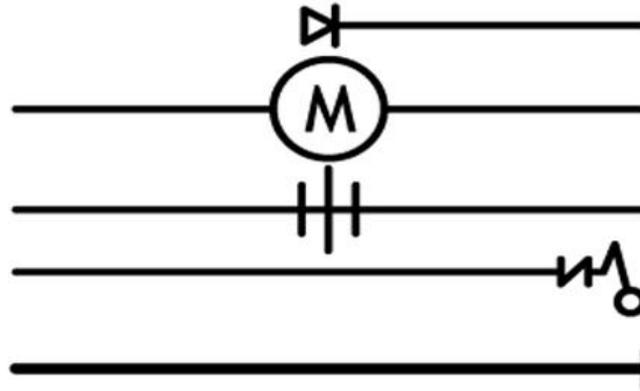


BALL VALVE

BUTTERFLY VALVE

HB/F

HOSE BIBB/FAUCET



PLUG

WM/SWM

WATER METER/SUB-WATER METER

UP

UNION PATENTE

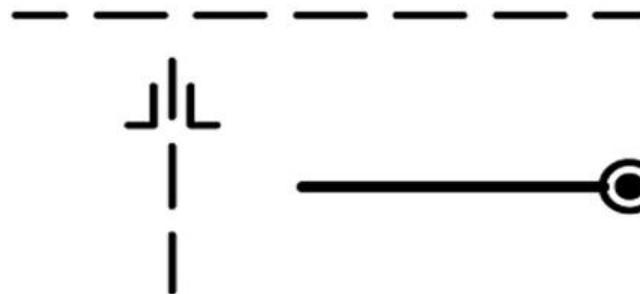
FV

FLOAT VALVE



CO

CLEAN OUT



V/VAC

VENT/VENT ABOVE CEILING

VSTR

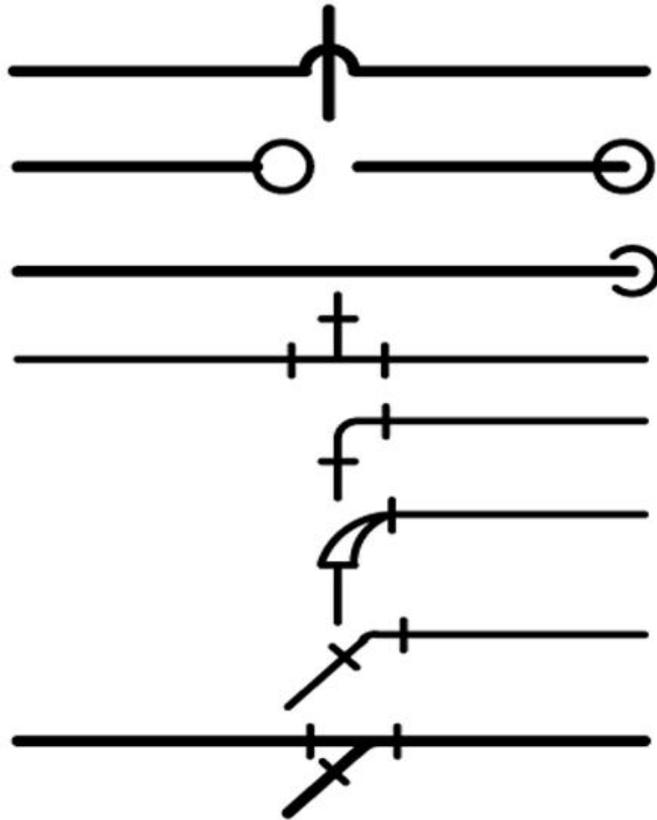
VENT STACK THRU ROOF



B/PH/C

BRACKET/PIPE HANGER/COUPLING

PLUMBING SIGNS AND SYMBOLS



CROSS OVER

PIPE UP

PIPE DOWN

TEE

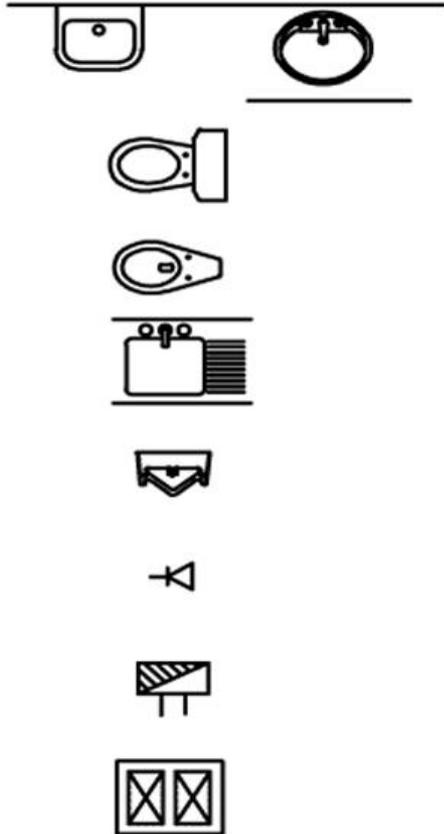
90° ELBOW OR 1/4 BEND

ELBOW REDUCER

45° ELBOW OR 1/8 BEND

WYE

PLUMBING SIGNS AND SYMBOLS



LAV

LAVATORY

WC

WATER CLOSET (TANK TYPE)

WC

WATER CLOSET (FLUSH VALVE)

KS/US

KITCHEN SINK / UTILITY SINK

UR

URINAL

SH

SHOWER HEAD

EWH

ELECTRIC WATER HEATER

OIL INTERCEPTOR

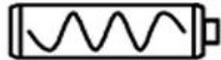
PLUMBING SIGNS AND SYMBOLS



STUDOR MAXI-VENT



STUDOR MINI-VENT



STUDOR P.A.P.A.



GT / OI

GREASE TRAP/OIL INTERCEPTOR



PUMP



DP / DJB

DRAIN PIPE / DRAINAGE JUNCTION BOX



AD/CB

AREA DRAIN/CATCH BASIN

PLUMBING SIGNS AND SYMBOLS



CD/PBD

CANOPY DRAIN/PLANTERS BOX DRAIN



GD/DD/LD

GUTTER DRAIN/DECK DRAIN/LEDGE DRAIN



FD/SD/PSD

FLOOR DRAIN/SHOWER DRAIN/PARKING SLOT DRAIN



TD / PD

TRENCH DRAIN/POOL/PROMENADE DRAIN



SI / CB

STREET INLET/CATCH BASIN



TDG

TRENCH DRAIN & GRATING



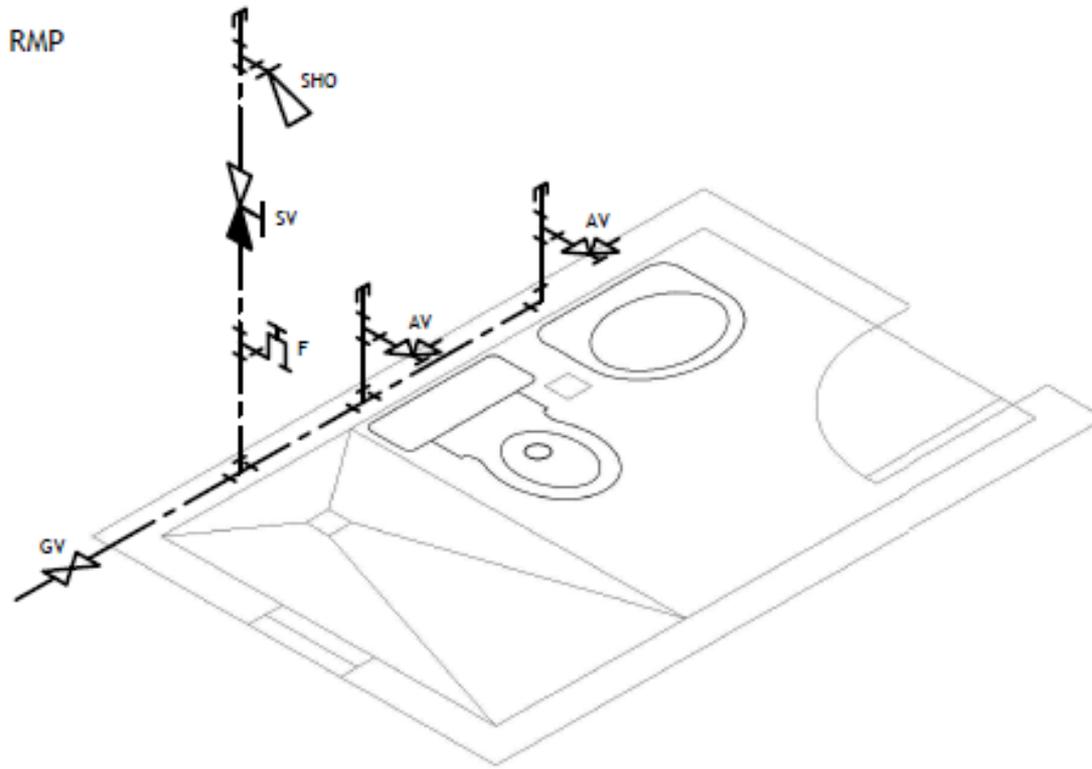
MH

MANHOLE

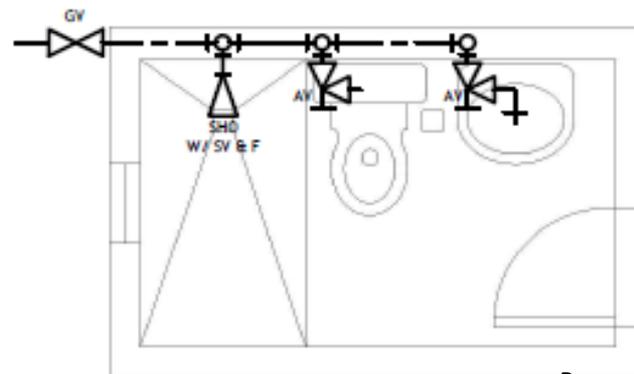
PLUMBING SIGNS AND SYMBOLS

CONVENTIONAL CONNECTIONS

	SCREW ENDS
	FLANGED ENDS
	BELL & SPIGOT ENDS
	WELDED/BRAZED ENDS
	SOLDERED ENDS



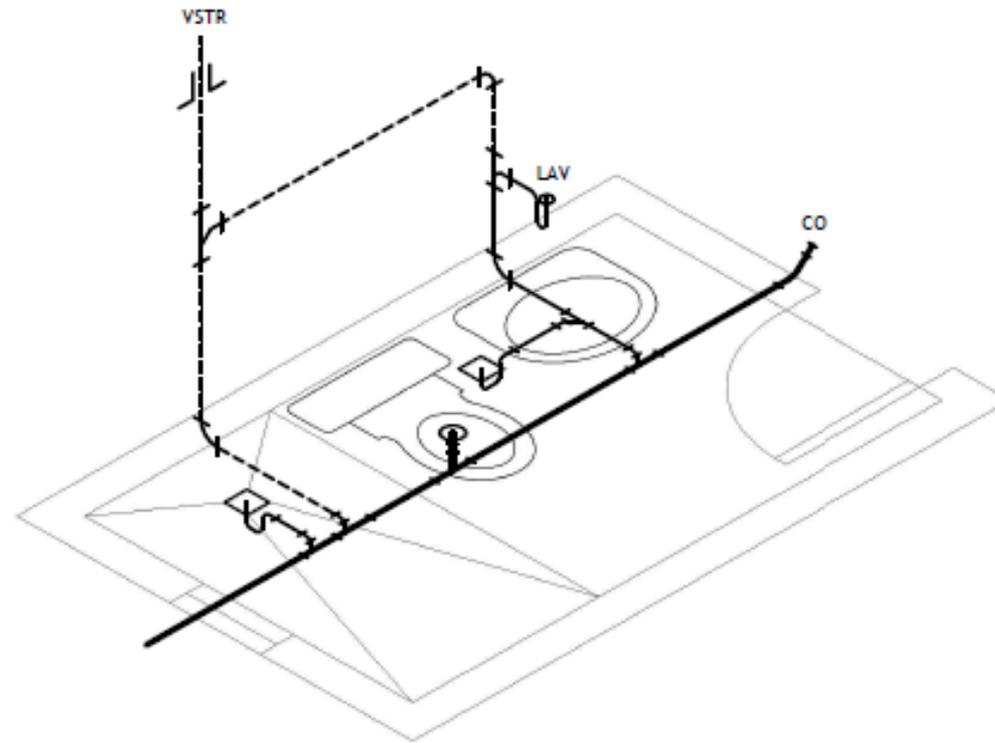
ISOMETRIC REPRESENTATION



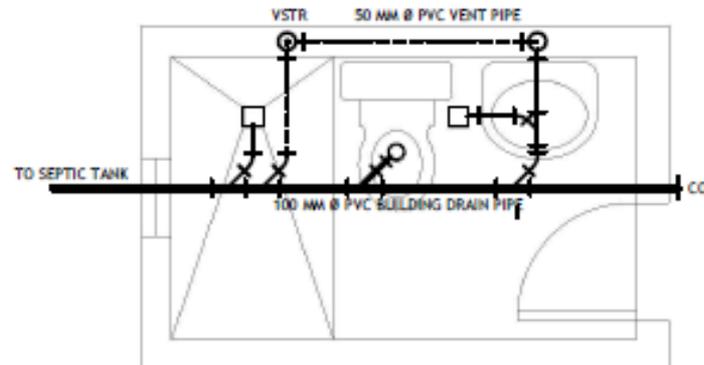
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1/6/2018

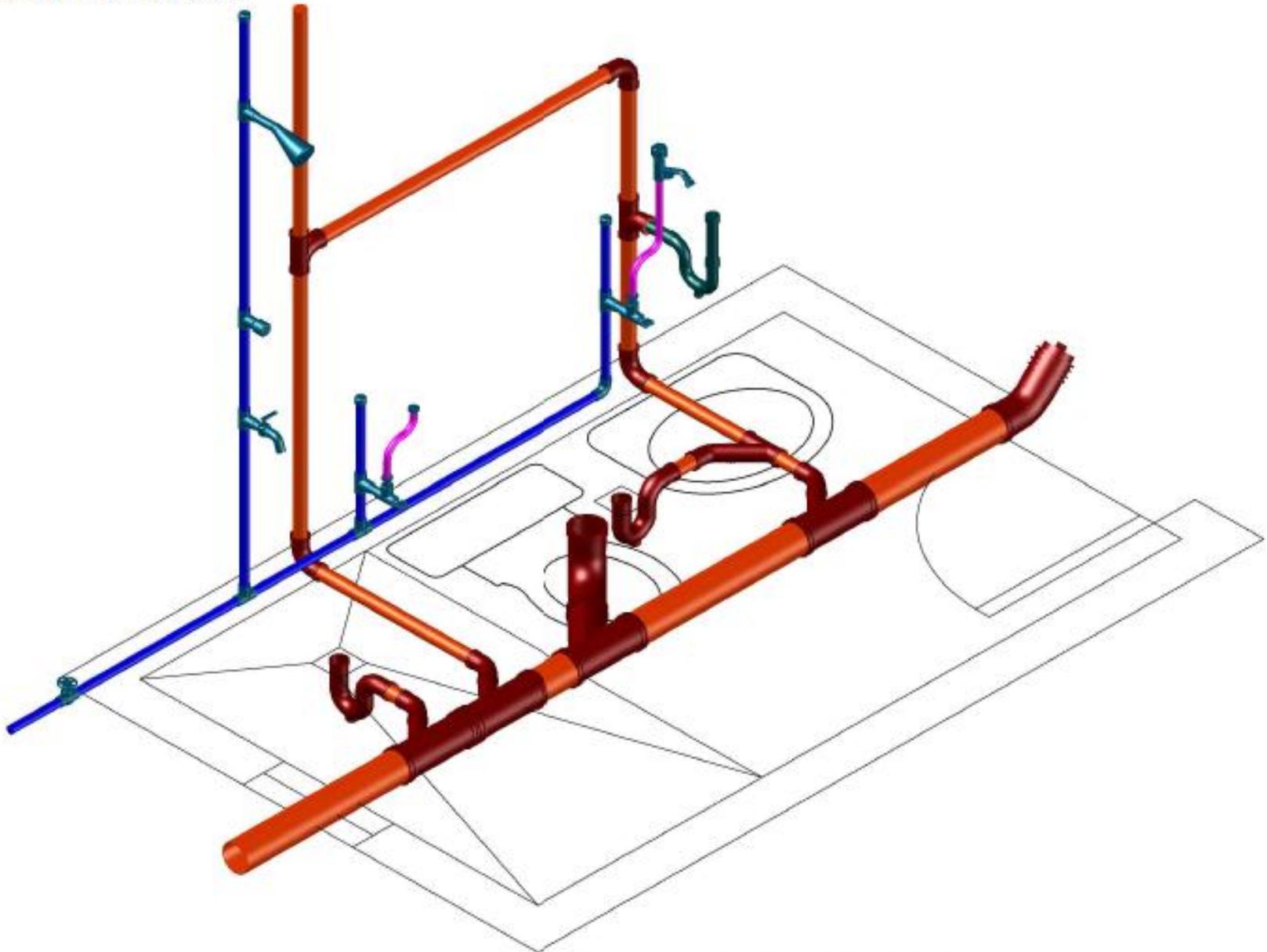
PARTIAL WATER DISTRIBUTION LAYOUT



ISOMETRIC DIAGRAM

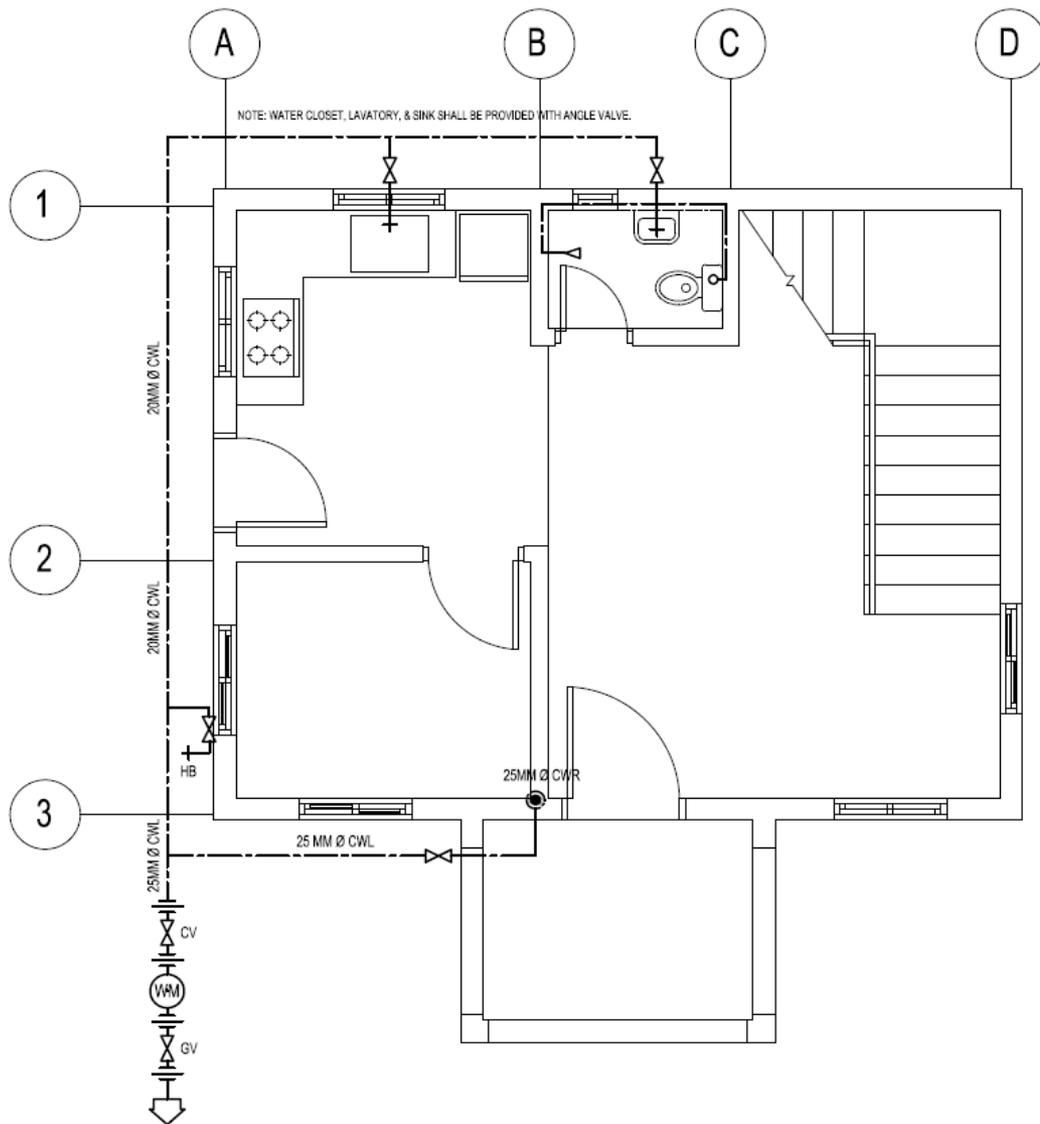


SANITARY LAYOUT



3D REPRESENTATION OF PLUMBING SYSTEM

WATER DISTRIBUTION LAYOUT



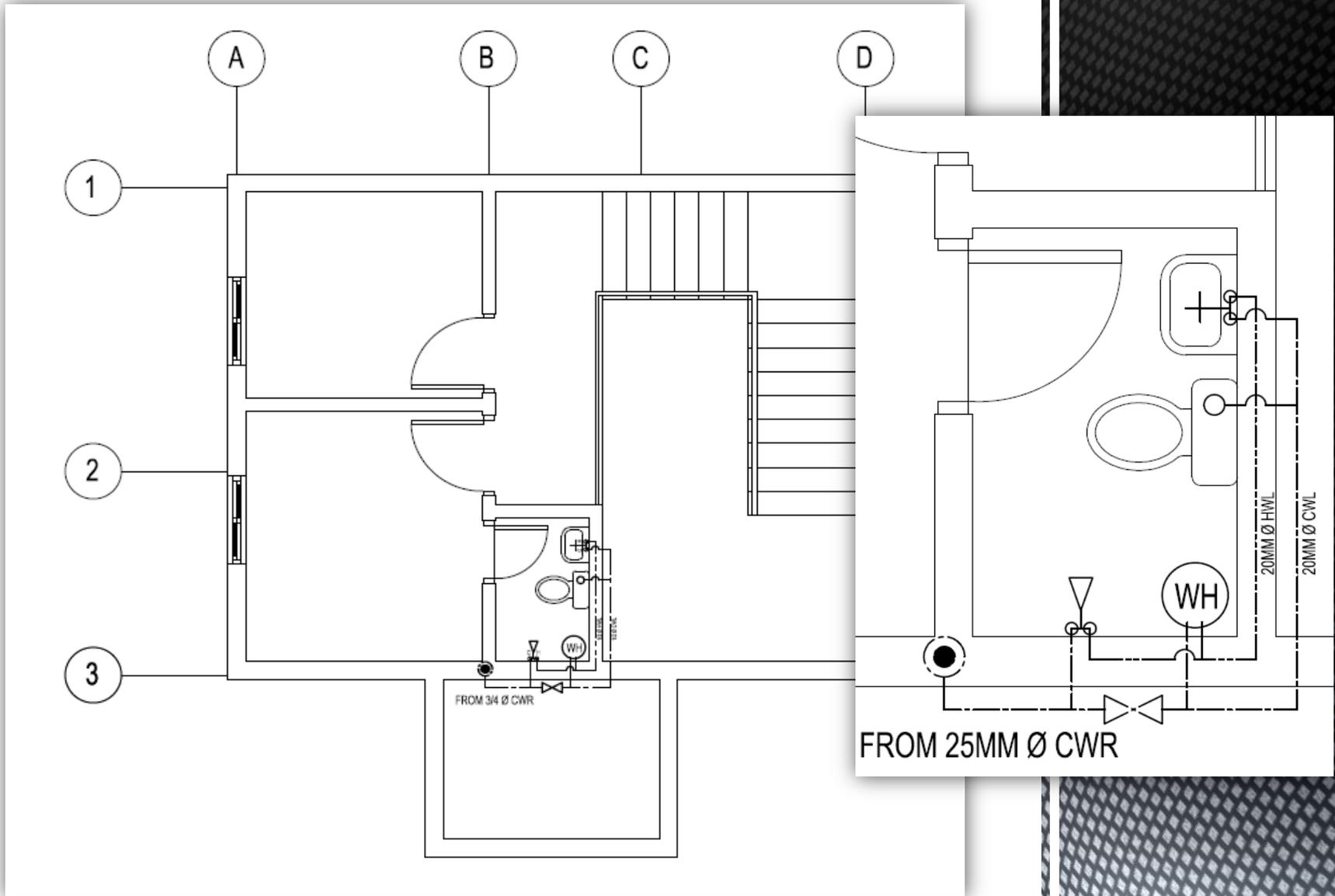
NOTE: WATER CLOSET, LAVATORY, & SINK SHALL BE PROVIDED WITH ANGLE VALVE.

TO MAIN WATER SUPPLY

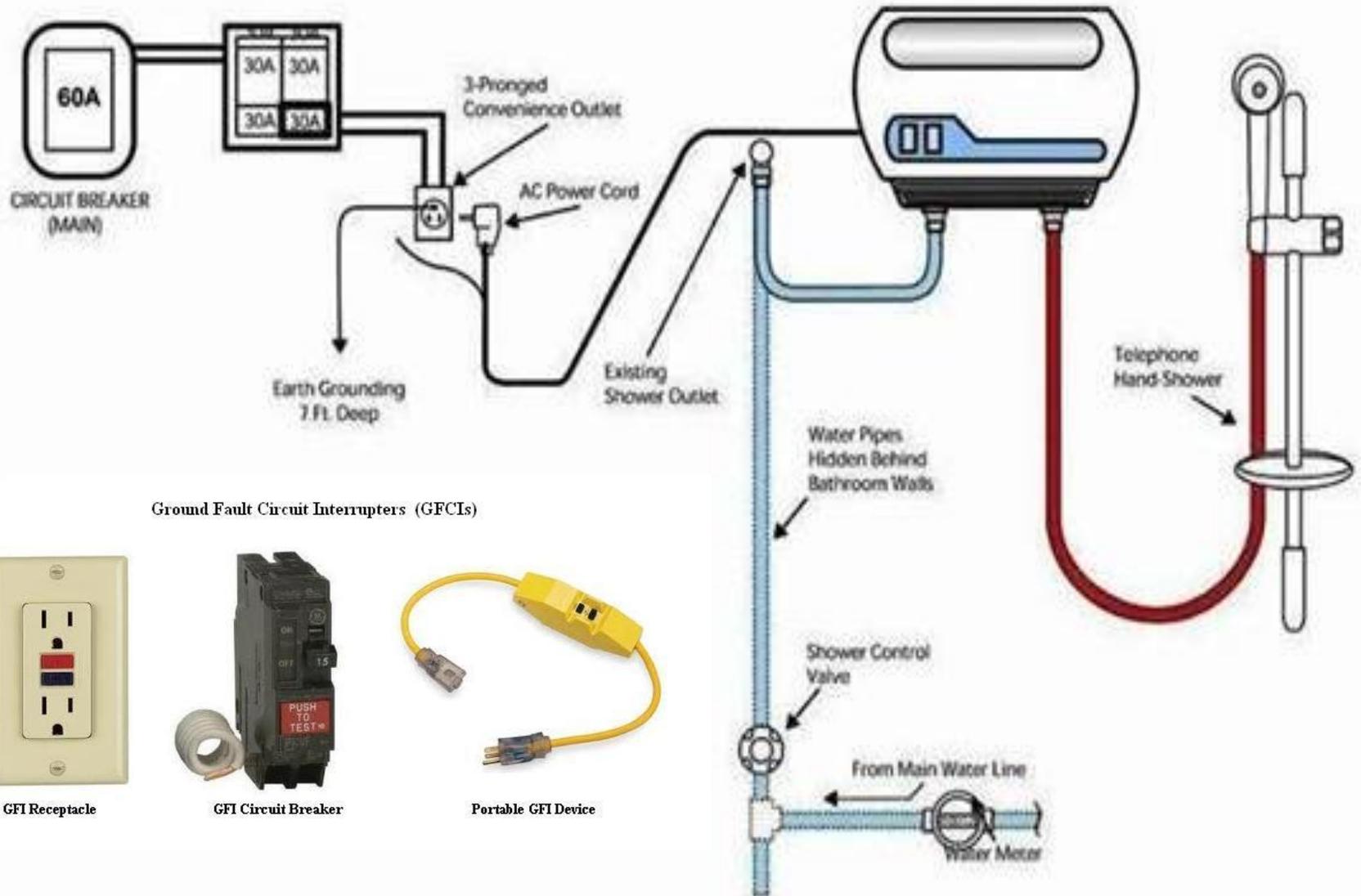
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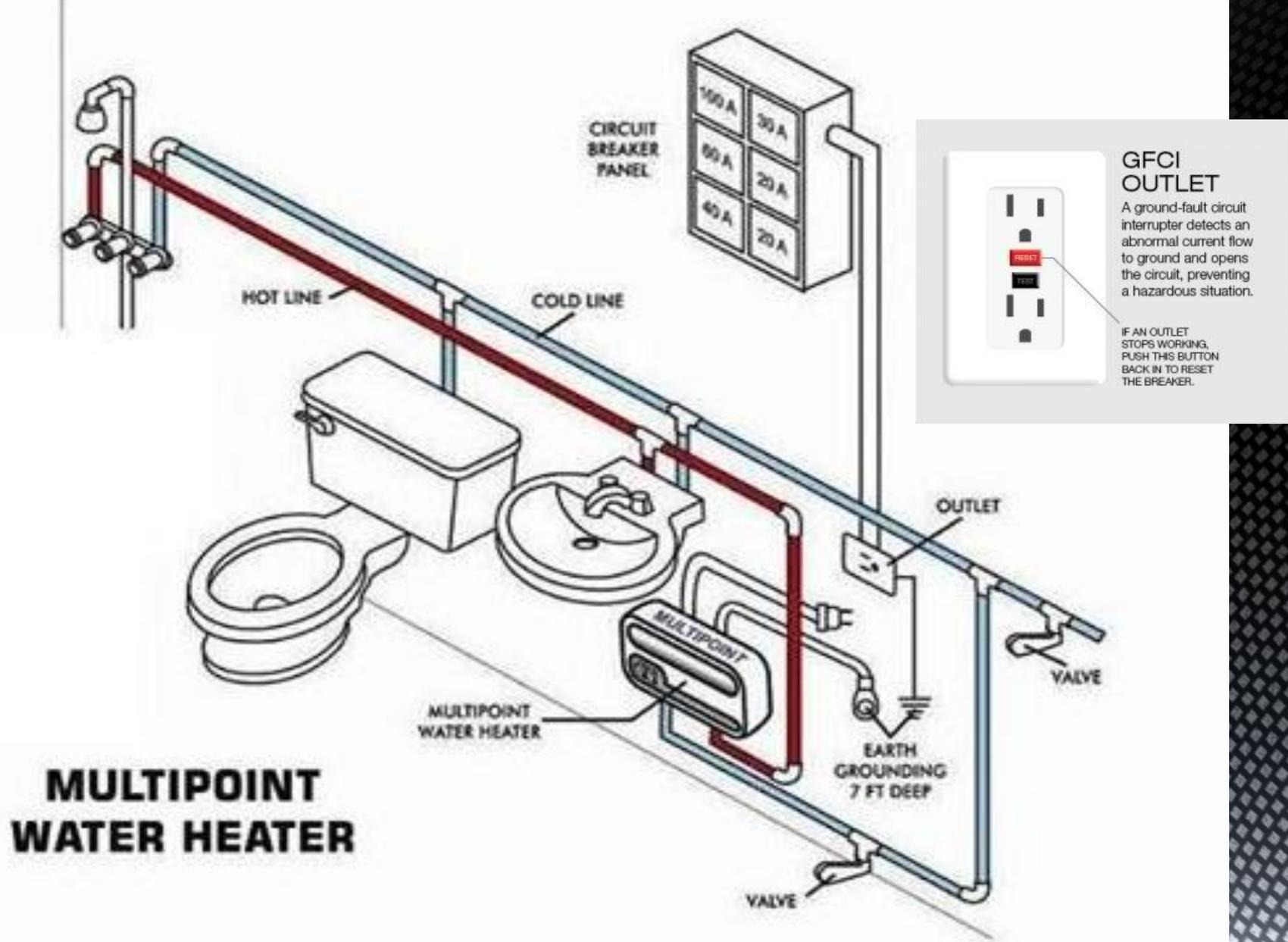
WATER DISTRIBUTION LAYOUT



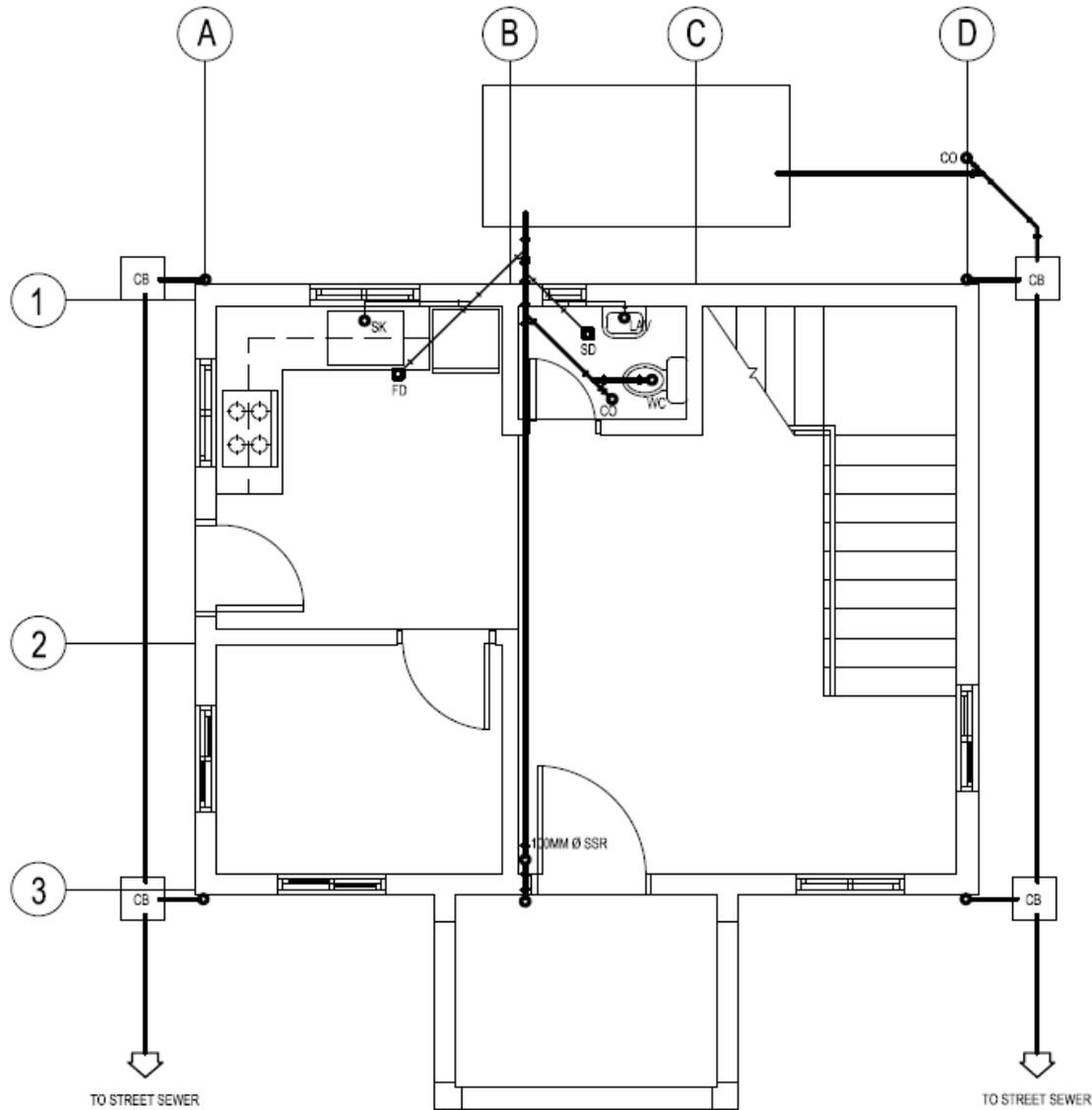
WATER DISTRIBUTION LAYOUT



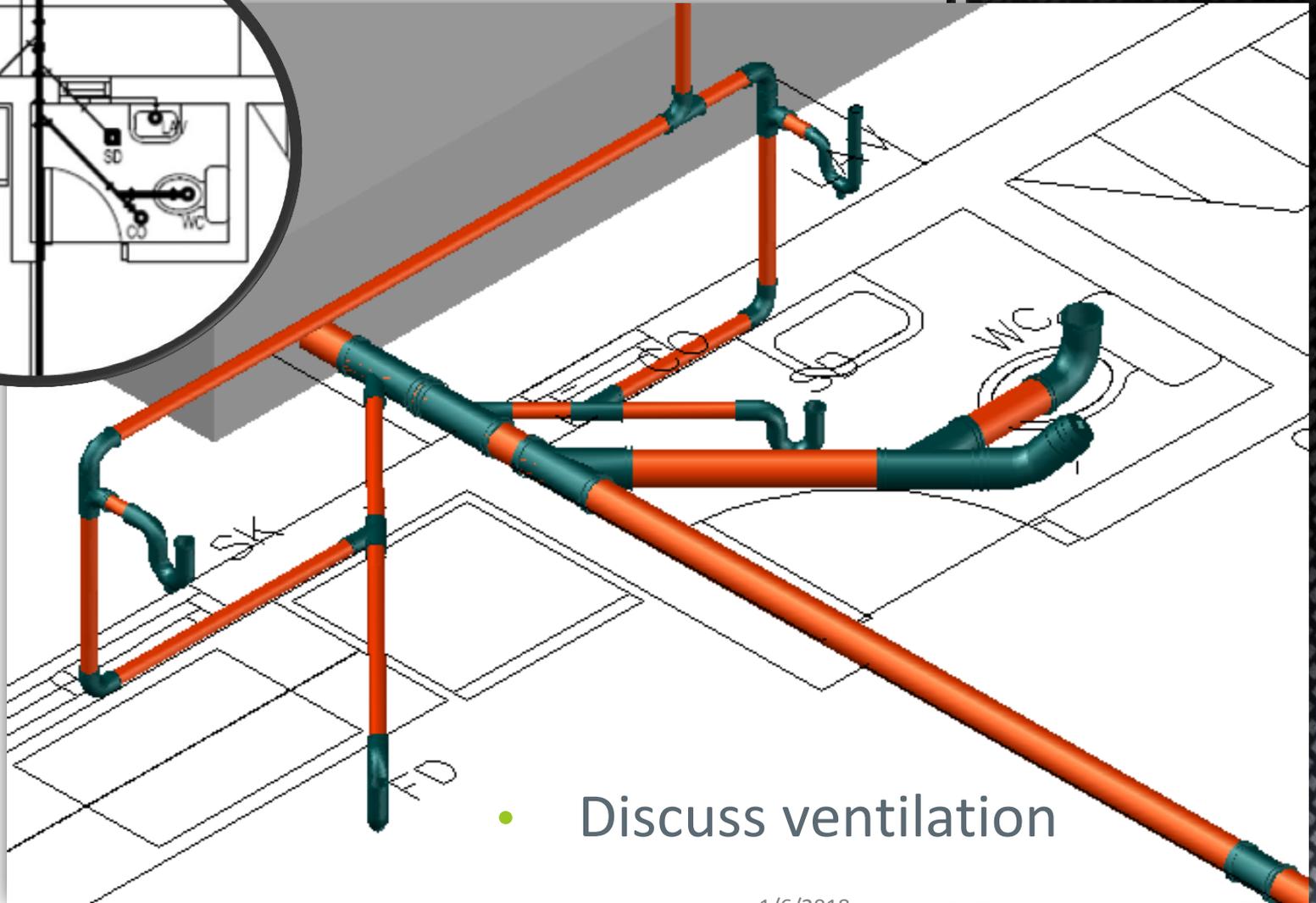
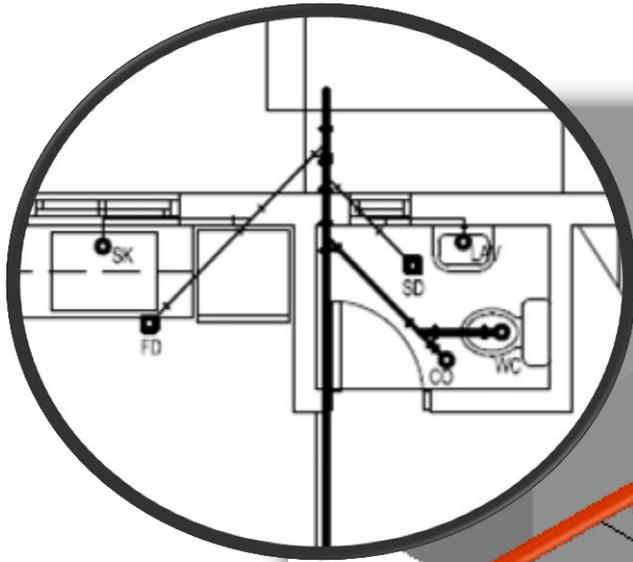
WATER DISTRIBUTION LAYOUT



SANITARY & STORM LAYOUT



SANITARY & STORM LAYOUT

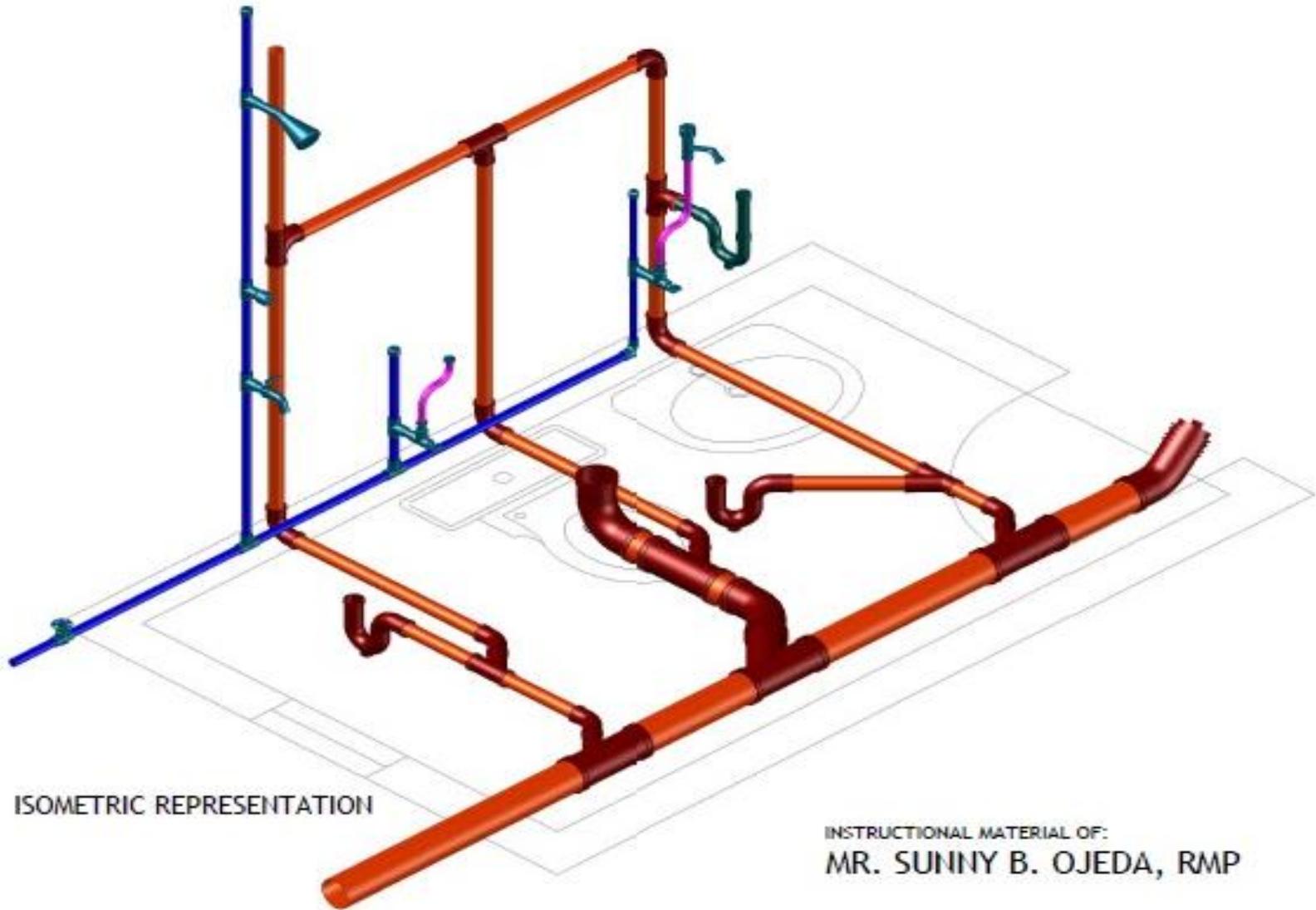


- Discuss ventilation

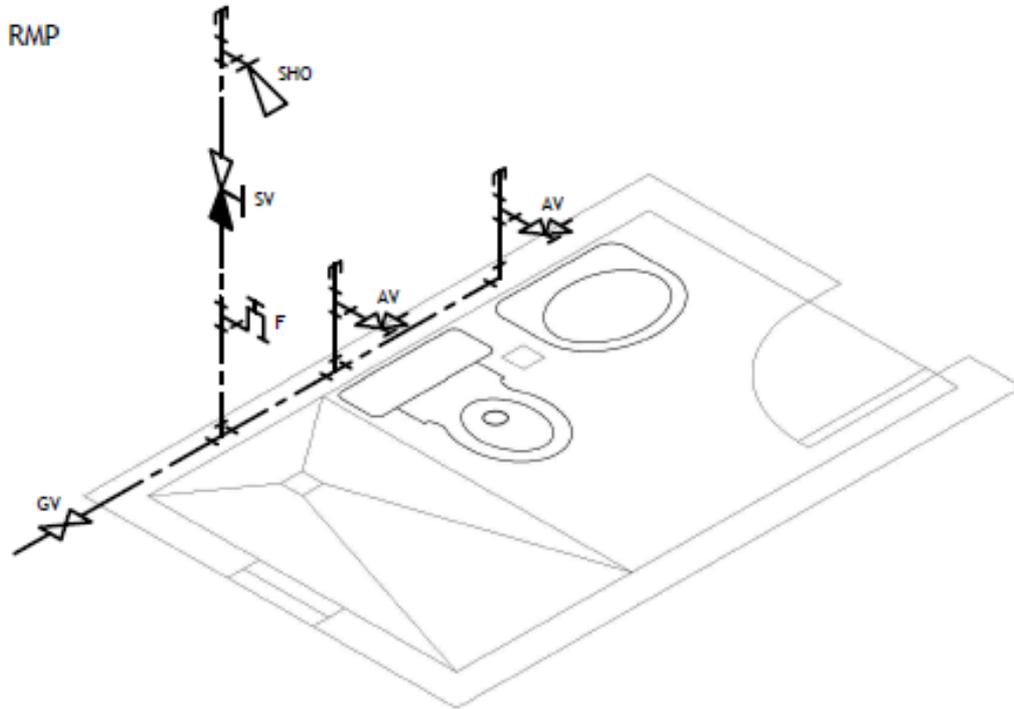
SANITARY & STORM LAYOUT



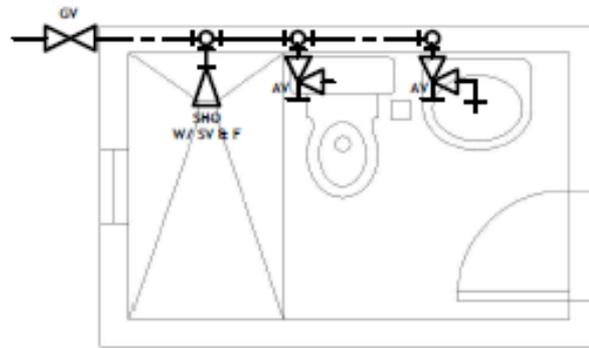
PARTIAL SANITARY & WATER DISTRIBUTION LAYOUT



INSTRUCTIONAL MATERIAL OF:
MR. SUNNY B. OJEDA, RMP

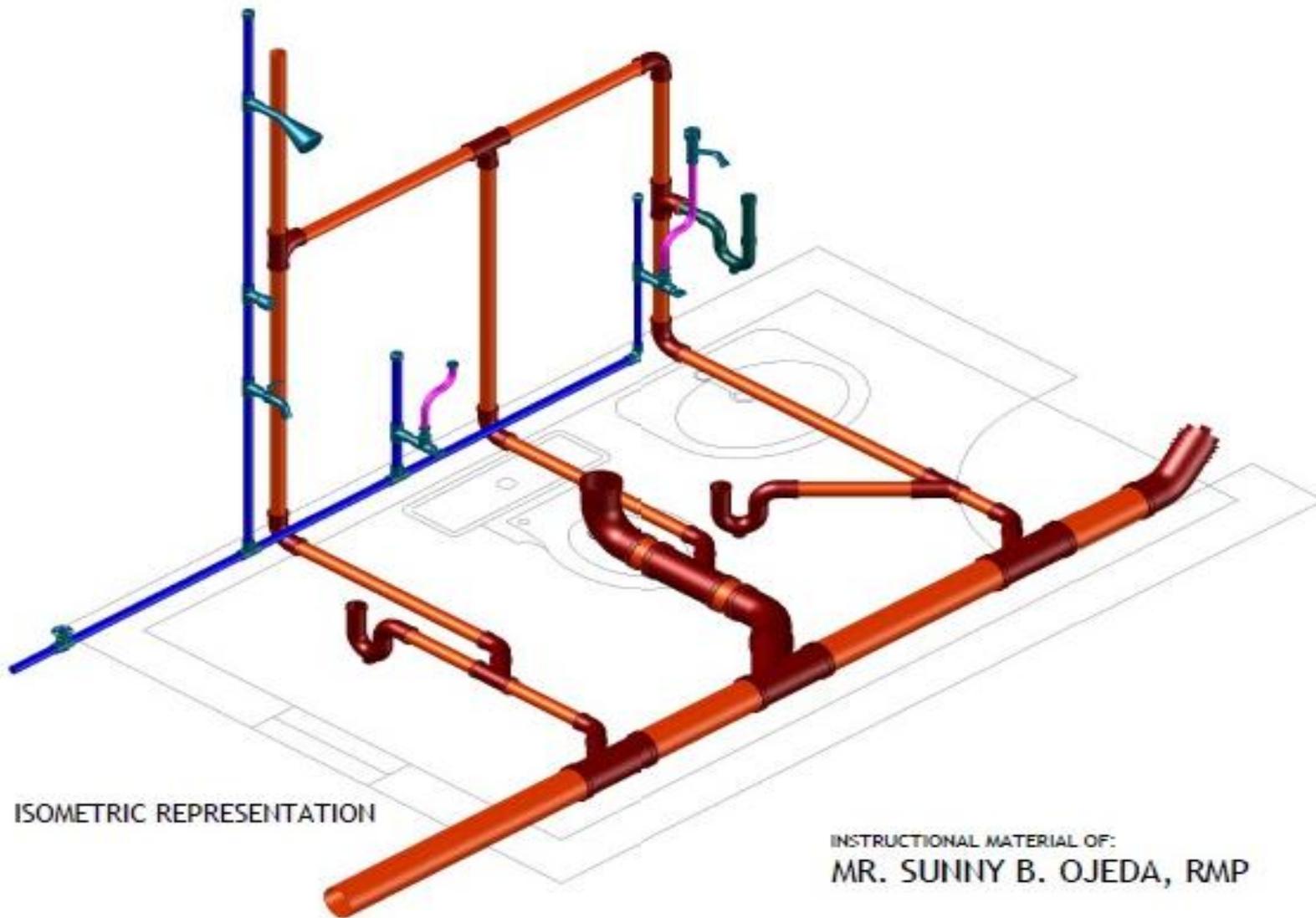


ISOMETRIC REPRESENTATION

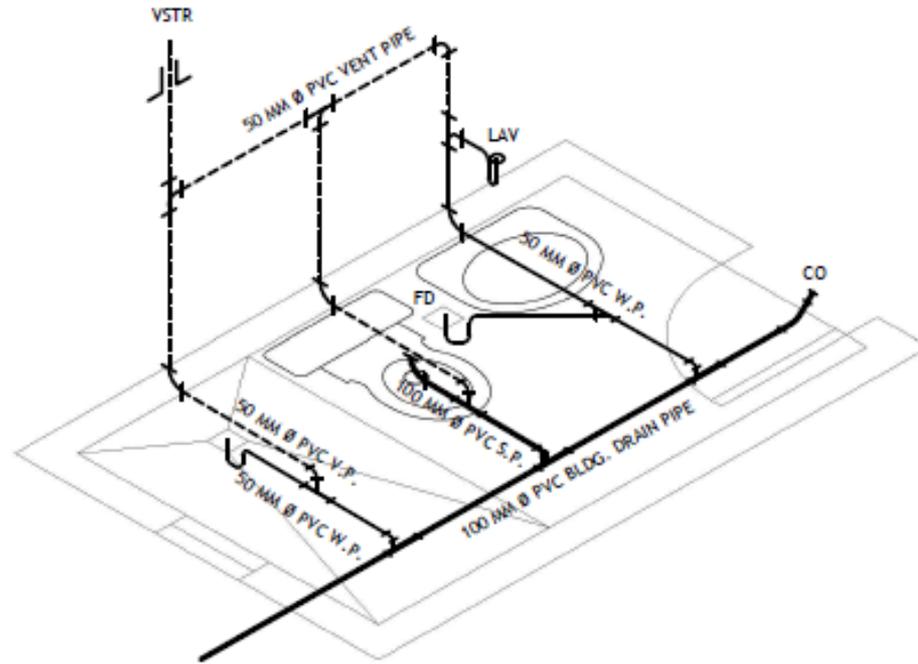


PARTIAL WATER DISTRIBUTION LAYOUT

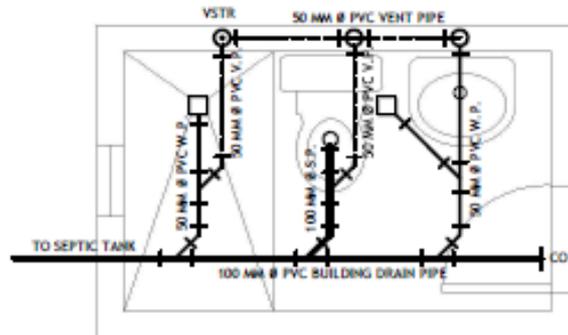
PARTIAL SANITARY & WATER DISTRIBUTION LAYOUT



INSTRUCTIONAL MATERIAL OF:
MR. SUNNY B. OJEDA, RMP



ISOMETRIC REPRESENTATION



SANITARY LAYOUT