

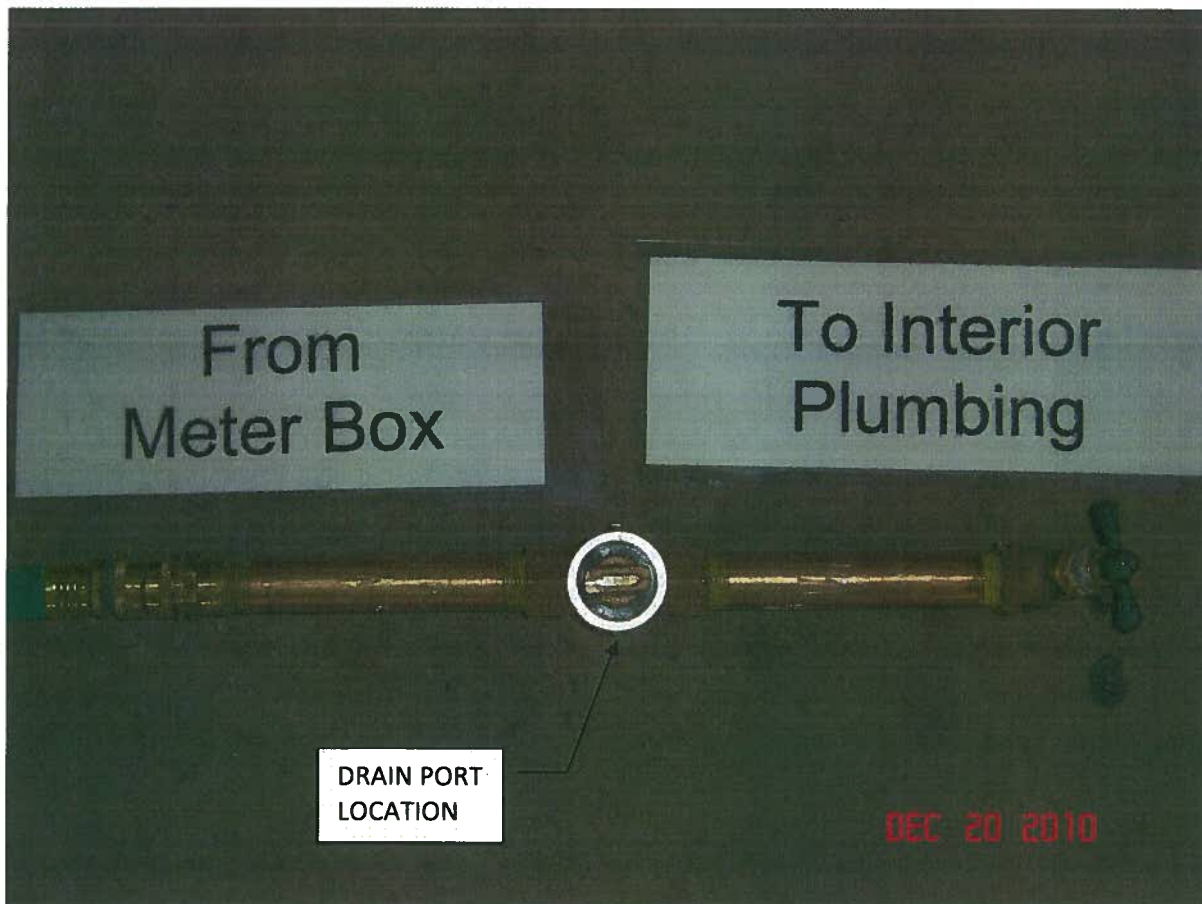


THE GREAT MAJORITY OF LEAK CONDITIONS ARE CREATED BY THE IMPROPER OPERATION OF A MASTER SHUT-OFF VALVE. THE TYPICAL MASTER SHUT-OFF VALVE IS A "STOP & DRAIN" VALVE. THIS TYPE OF VALVE HAS THREE PORTS

- ONE PORT IS THE INCOMING SUPPLY FROM THE METER BOX
- ONE PORT IS THE OUTGOING FEED TO THE INTERIOR PIPING OF THE HOUSE
- ONE PORT IS A DRAIN THAT ALLOWS FOR THE REMOVAL OF WATER FROM THE INTERIOR PIPING. THIS DRAIN PORT IS LOCATED ON THE SIDE OF THE VALVE

THE TYPICAL VALVE IS BURIED ABOUT TWO FEET UNDERGROUND AND IS SURROUNDED WITH A POCKET OF GRAVEL. THE GRAVEL PROVIDES A PLACE FOR WATER TO GO WHEN THE PIPES ARE BEING DRAINED. THERE IS NORMALLY A LONG METAL HANDLE ATTACHED TO THE TOP OF THE VALVE. THE HANDLE IS MOST OFTEN LOCATED IN A CLOSET OR CABINET.

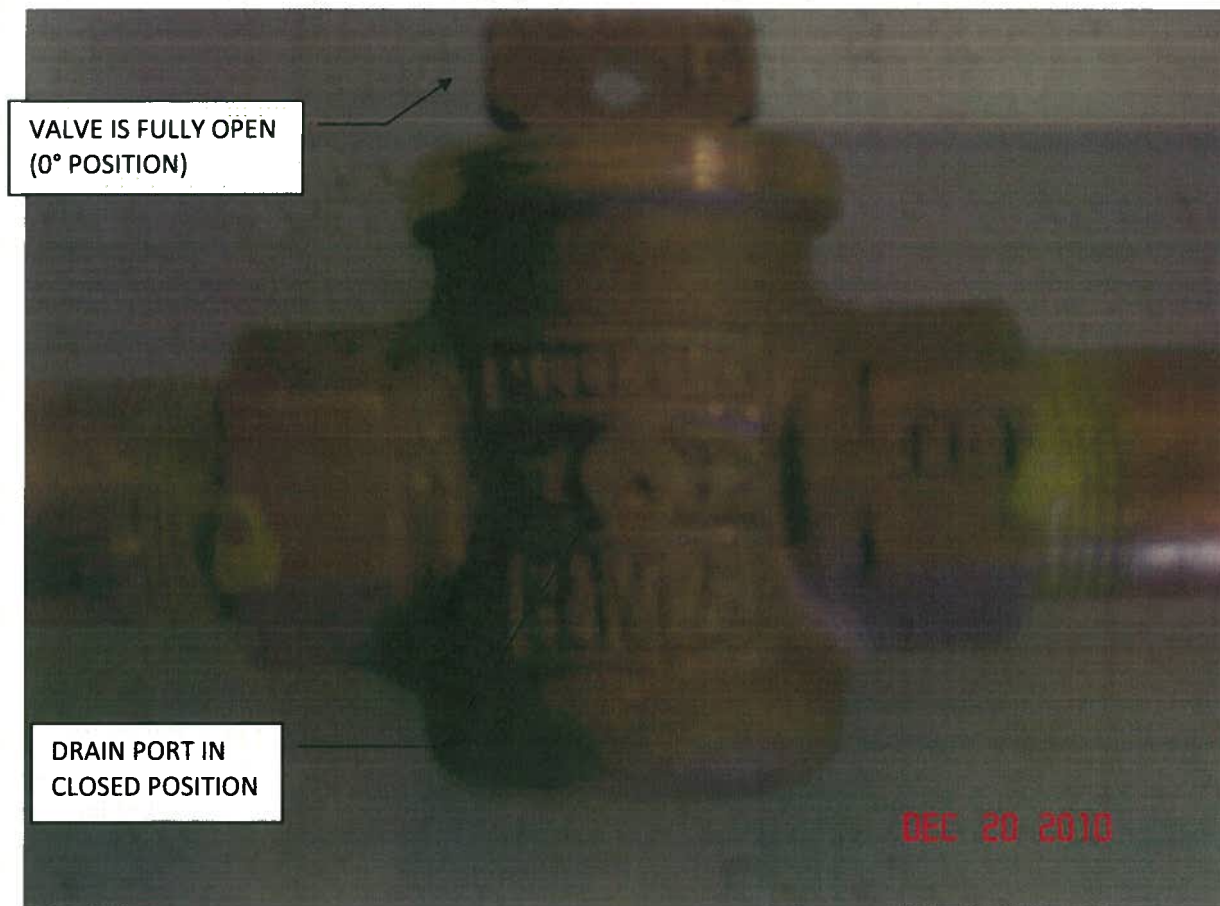
TYPICAL SET-UP FOR A MASTER SHUTOFF VALVE



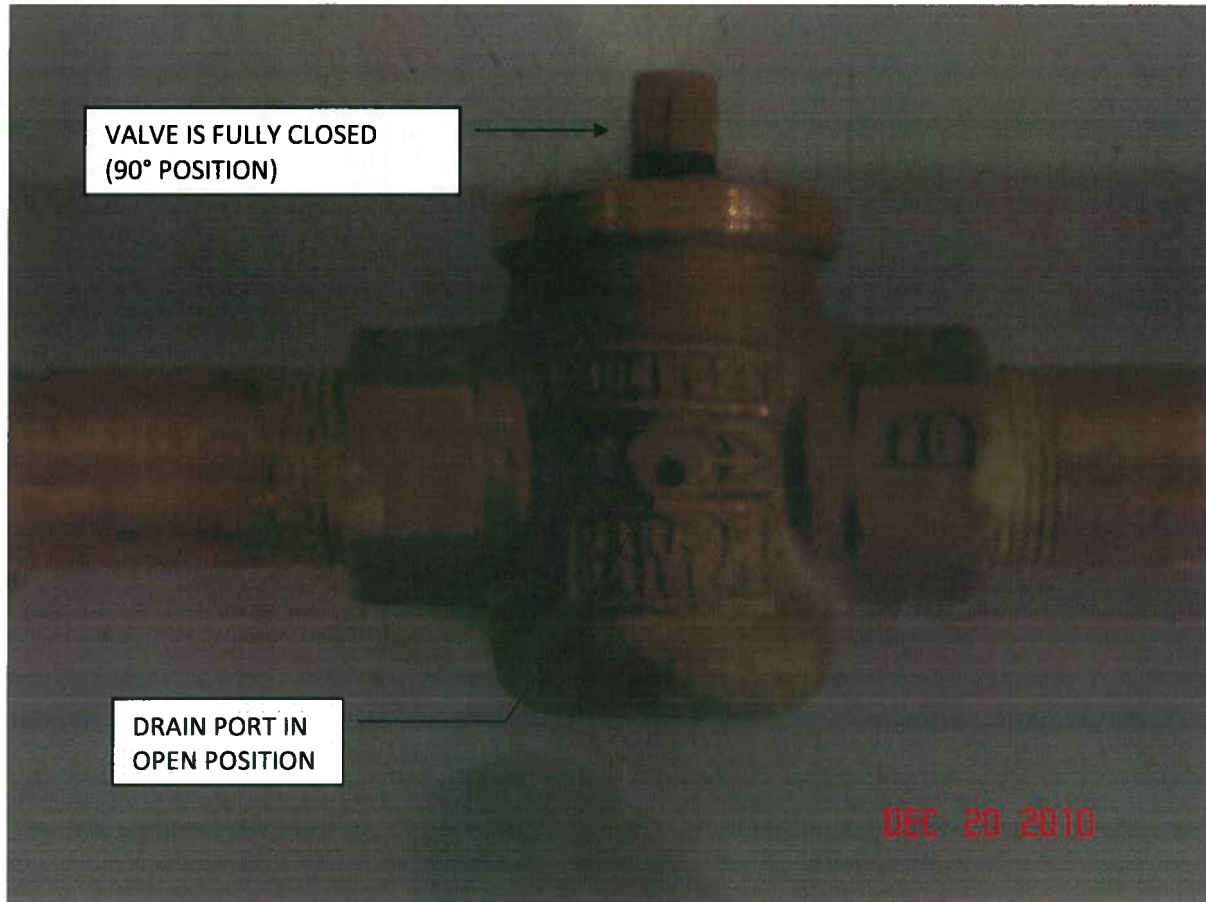
A STOP & DRAIN VALVE HAS A 90° ROTATION. THE VALVE CAN BE IN ONE OF THREE POSITIONS:

- 1) FULL OPEN (0° POSITION). THE INCOMING SUPPLY IS FULLY OPEN. THE OUTGOING FEED IS FULLY OPEN. THE DRAIN PORT IS FULLY CLOSED.
- 2) FULL CLOSED (90° POSITION). THE INCOMING SUPPLY IS FULLY CLOSED. THE OUTGOING FEED IS FULLY OPEN. THE DRAIN PORT IS FULLY OPEN. THIS POSITION WILL DRAIN THE INTERIOR PIPING OF THE HOUSE.
- 3) PARTIALLY OPEN (ANYPLACE BETWEEN 0° AND 90°). ALL THREE PORTS ARE PARTIALLY OPEN. **THIS WILL CREATE A LEAK CONDITION.** WATER WILL ENTER THE HOUSE THROUGH METER AND GO OUT THE DRAIN PORT. SUCH A LEAK CAN BE AS LARGE AS 3 TO 5 GALLONS PER MINUTE AND MAY NOT BE VISIBLE AT THE GROUND SURFACE UNDER THE HOUSE

DRAIN PORT IN CLOSED POSITION



DRAIN PORT IN OPEN POSITION



VALVE IS FULLY CLOSED
(90° POSITION)

DRAIN PORT IN
OPEN POSITION

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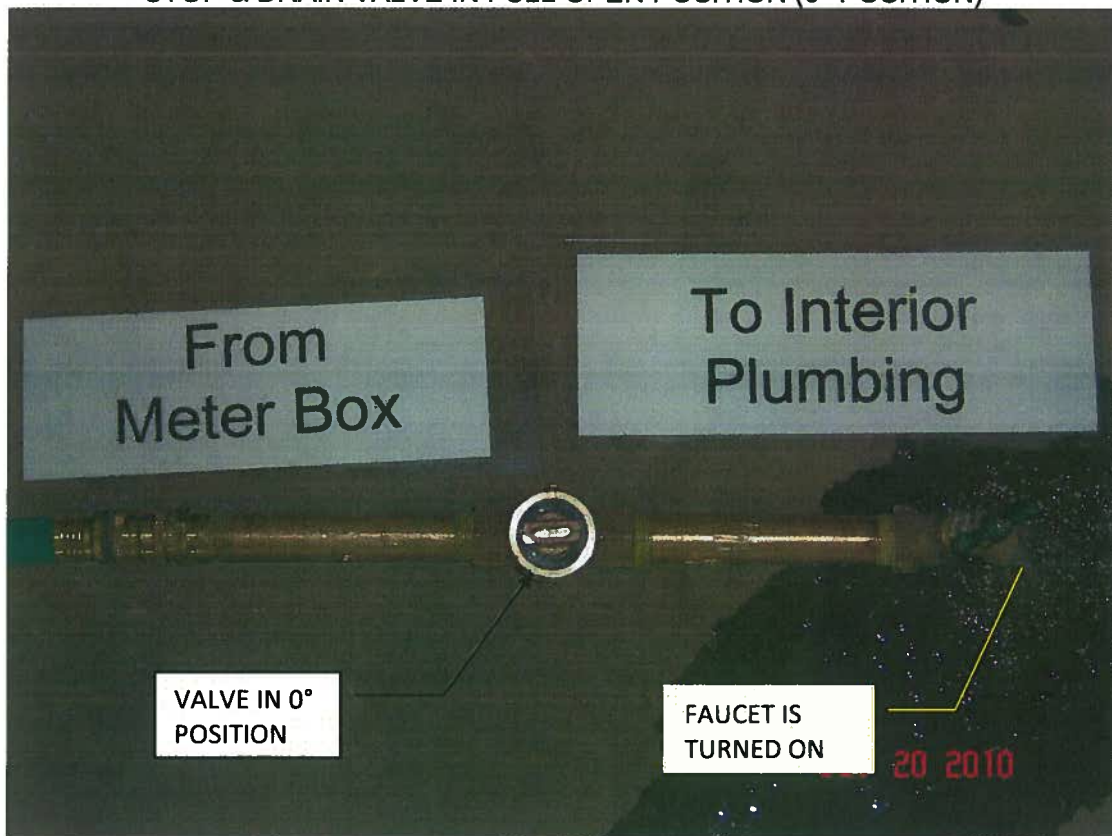
HOW CAN I TELL IF THE VALVE IS FULLY OPENED OR FULLY CLOSED ?

THE BEST METHOD FOR CHECKING A STOP & DRAIN VALVE IS TO LISTEN FOR THE SOUND OF FLOWING WATER.

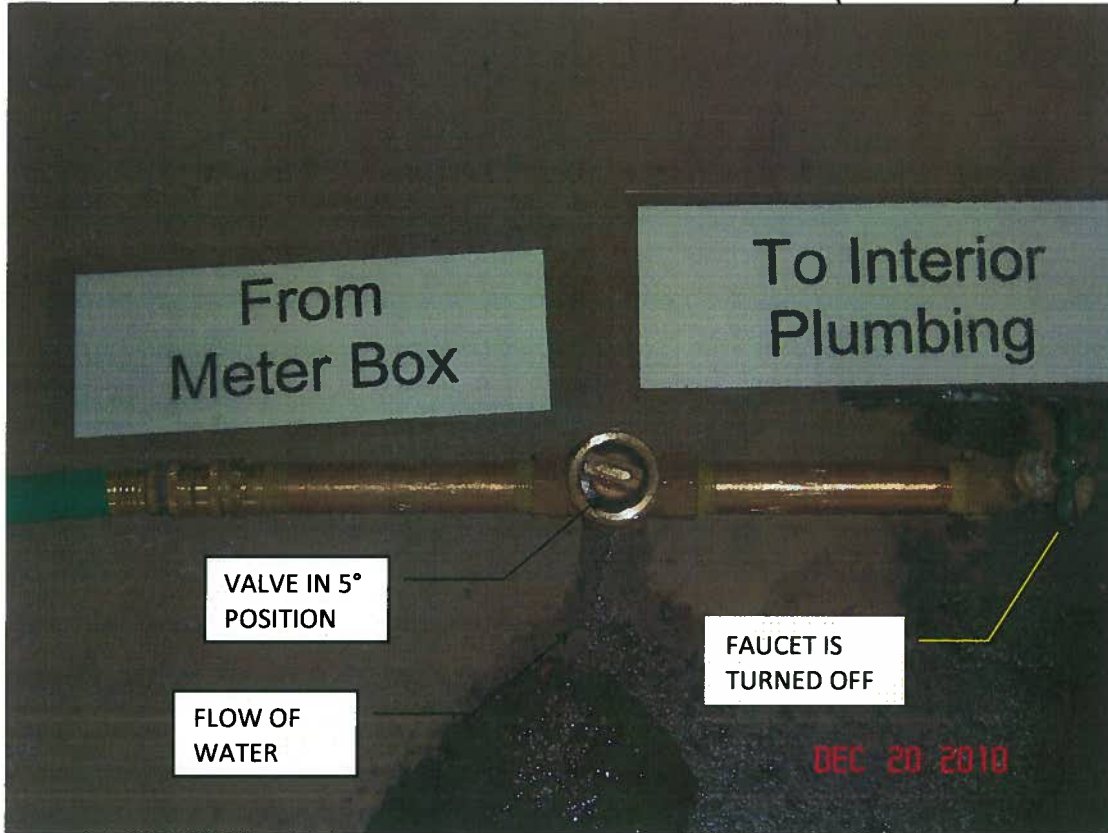
- 1) VERIFY THAT ALL SINKS, TOILETS, SHOWERS, ETC. ARE TURNED OFF
- 2) PLACE YOUR EAR AS CLOSE TO (OR ON) THE METAL HANDLE AS POSSIBLE
- 3) IF WATER IS FLOWING, YOU WILL HEAR A BUZZING/HISSING SOUND

THE FOLLOWING SEQUENCE OF PICTURES WILL DEMONSTRATE HOW A PARTIALLY OPEN STOP & DRAIN VALVE WILL CREATE A LEAK.

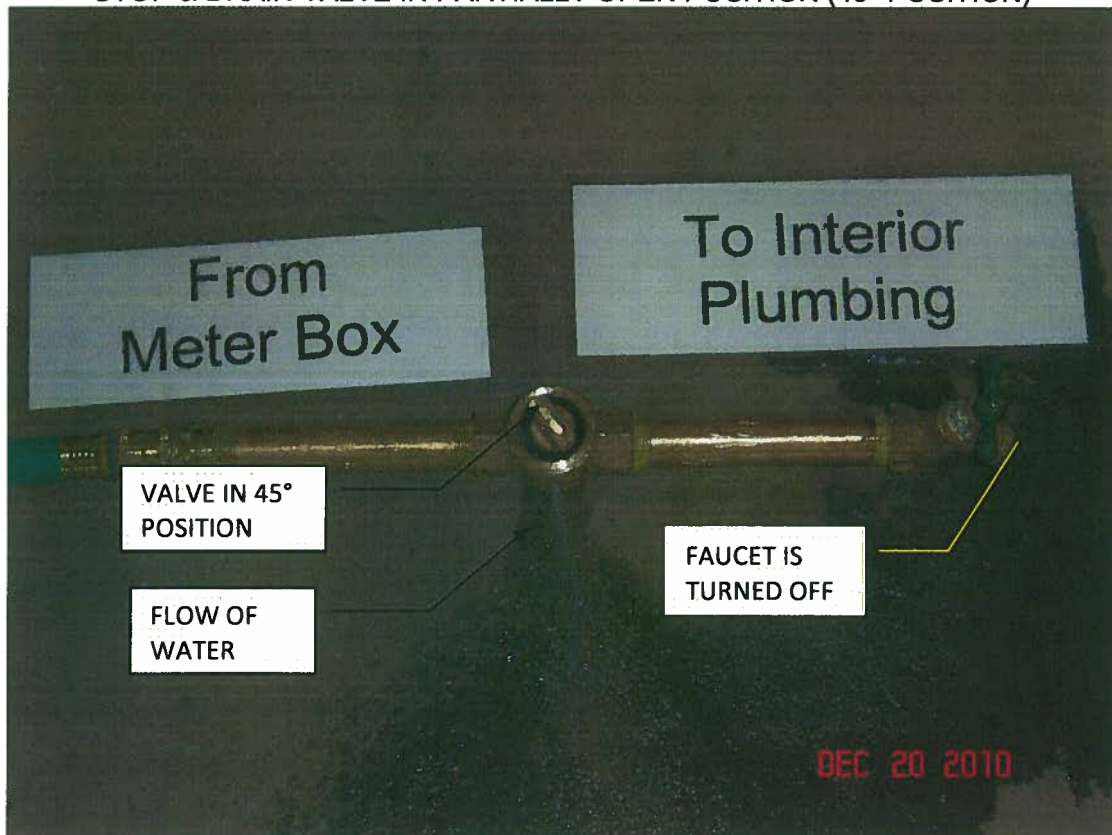
STOP & DRAIN VALVE IN FULL OPEN POSITION (0° POSITION)



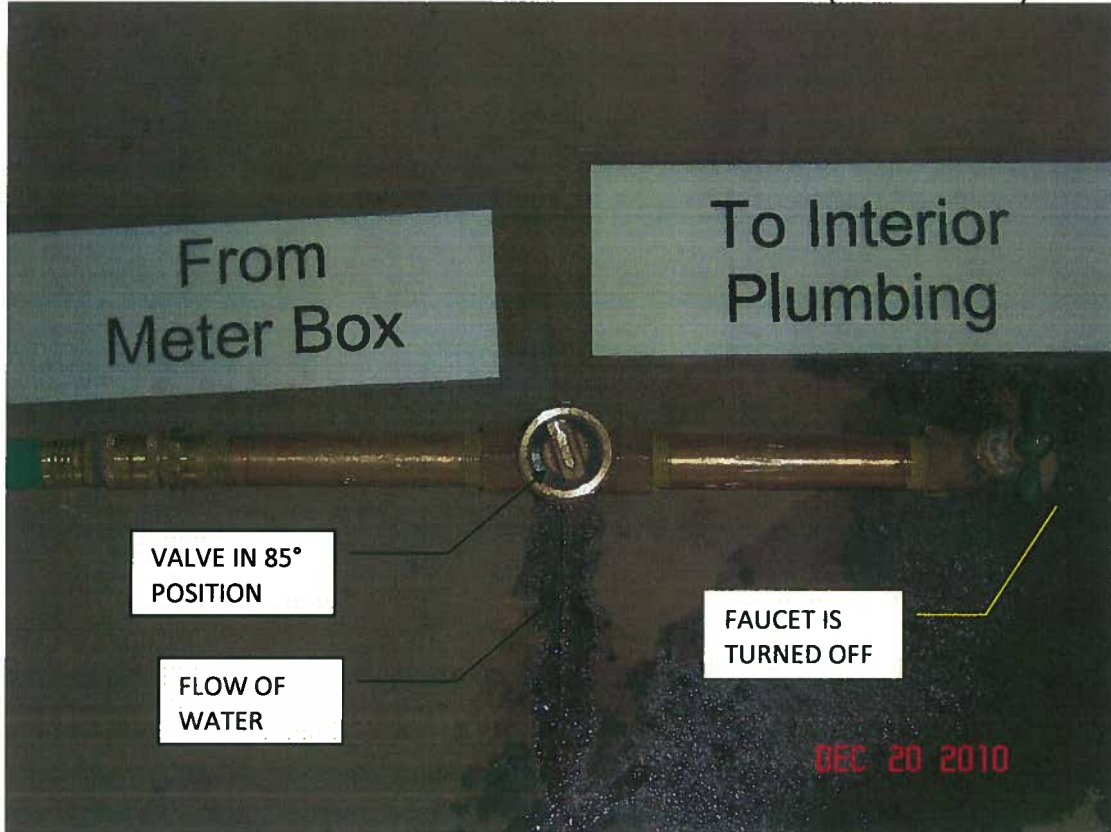
STOP & DRAIN VALVE IN PARTIALLY OPEN POSITION (5° POSITION)



STOP & DRAIN VALVE IN PARTIALLY OPEN POSITION (45° POSITION)



STOP & DRAIN VALVE IN PARTIALLY OPEN POSITION (85° POSITION)



STOP & DRAIN VALVE IN FULLY CLOSED POSITION (90° POSITION)

