

This presentation premiered at WaterSmart Innovations

watersmartinnovations.com





Hot Water Distribution Problems

Water Smart Innovations 2015

October 8, 2015

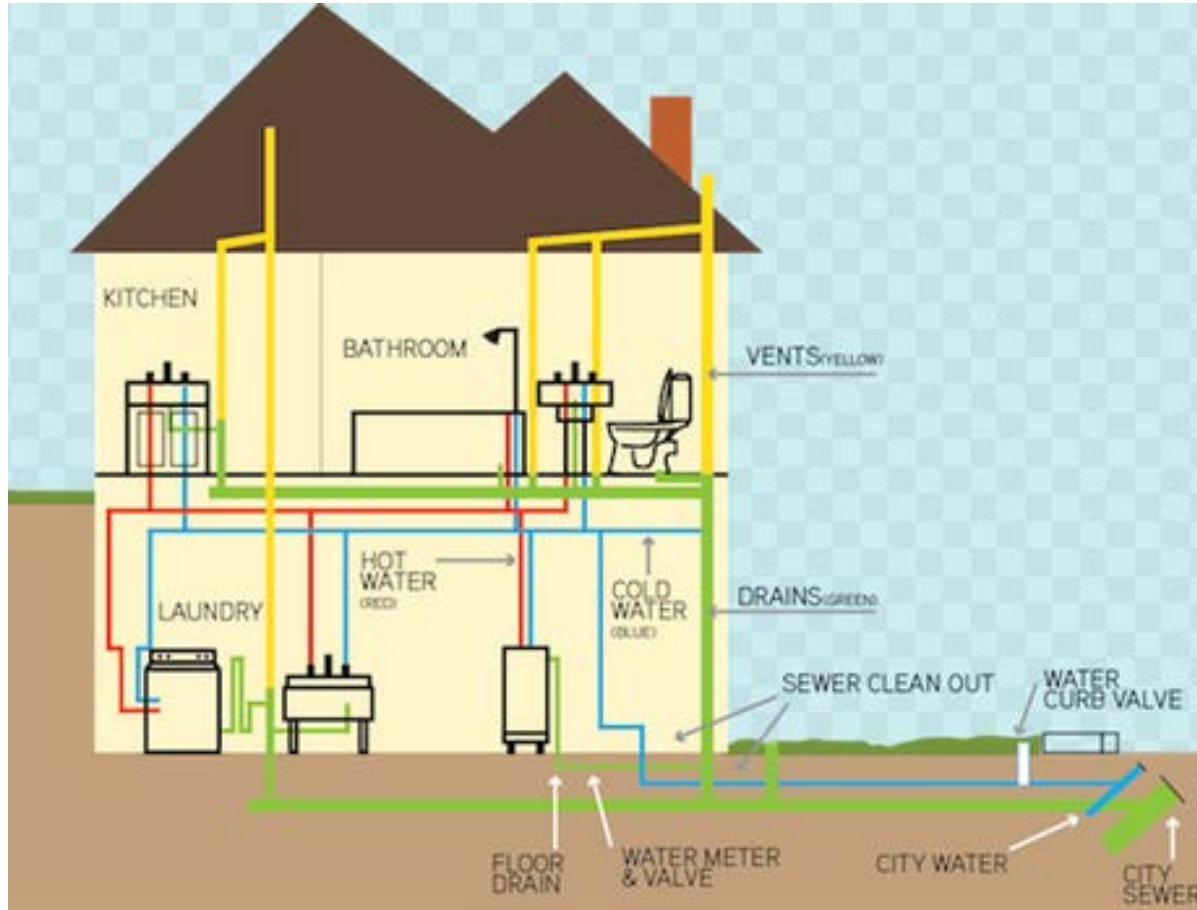
T-1551

3:05pm – 3:35pm

Sonoma D

Russ Horner

Water Management, Inc.



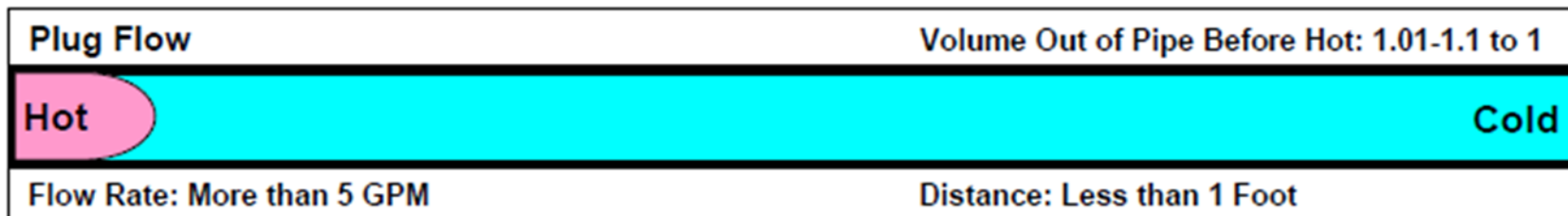
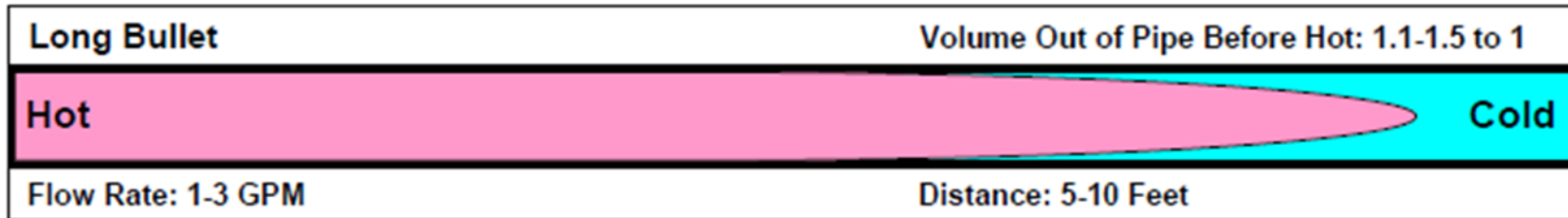
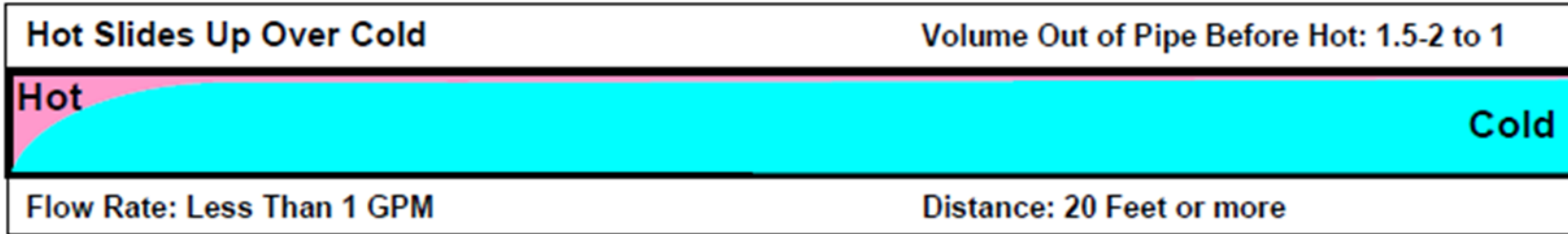
This is **NOT** a presentation about problems with Hot Water Distribution in Single Family Homes

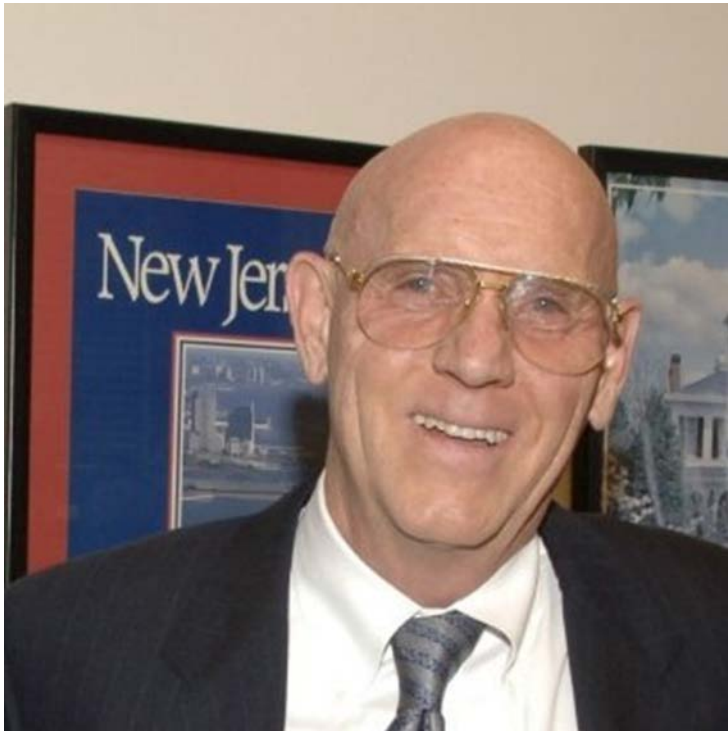


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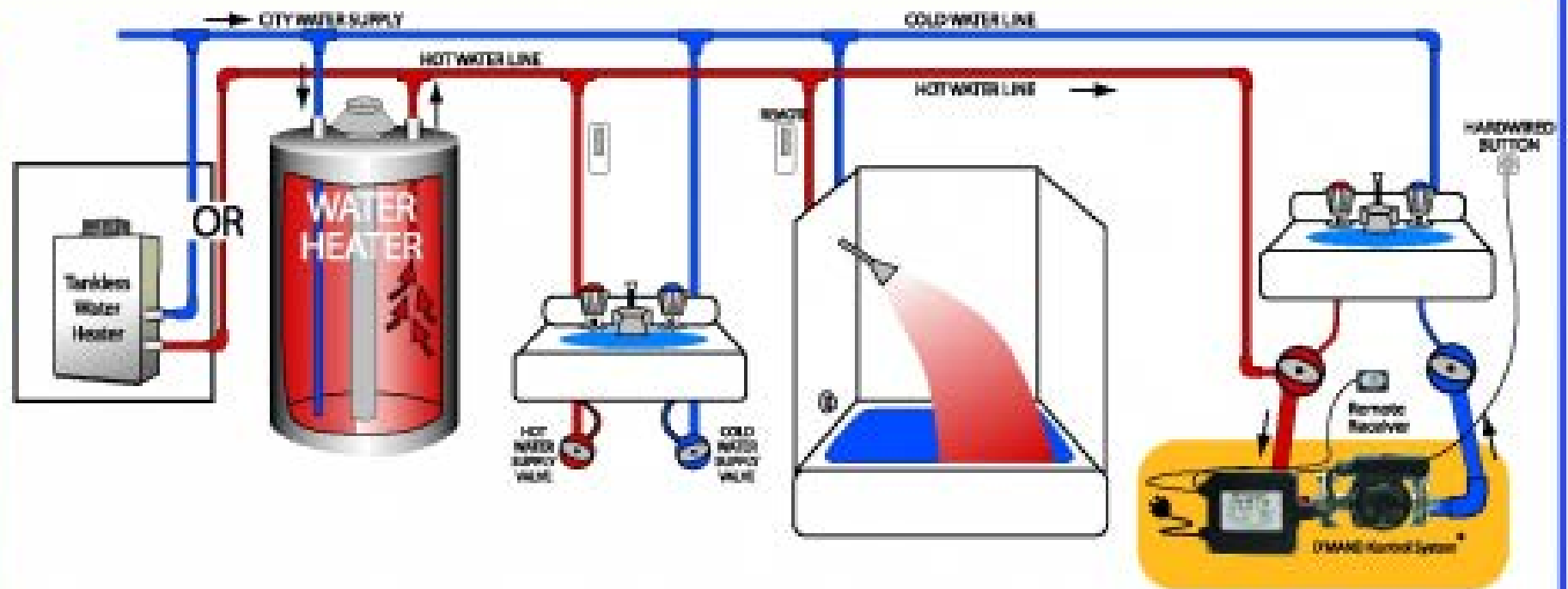
(714) 668 1200

www.gothotwater.com



**EXISTING HOMES
STANDARD
PLUMBING**

**D'MAND Kontrols[®]
System installs at
the furthest fixture
from the water
heater.**









With Coal Mines closing the
Canary Unemployment
Rate has been increasing.

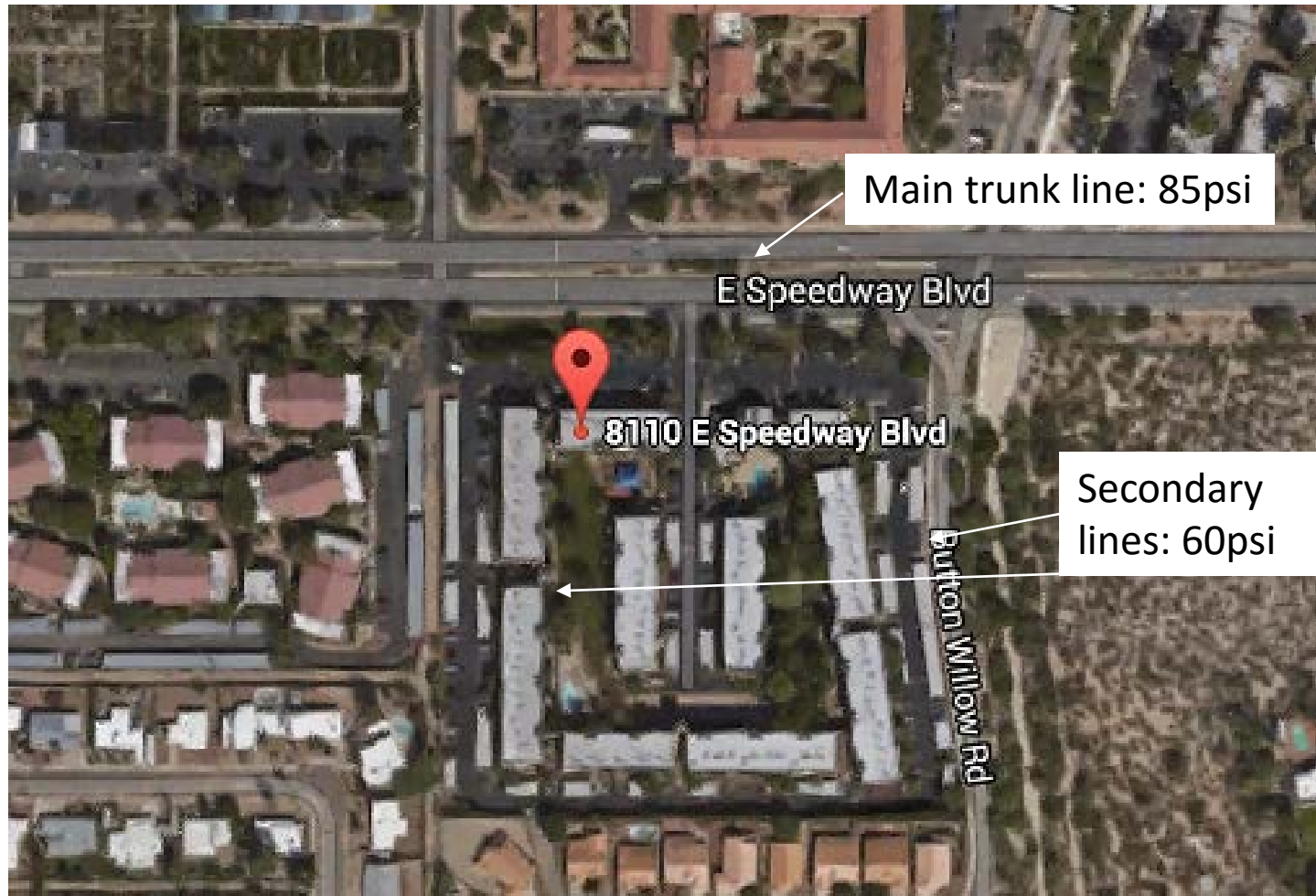


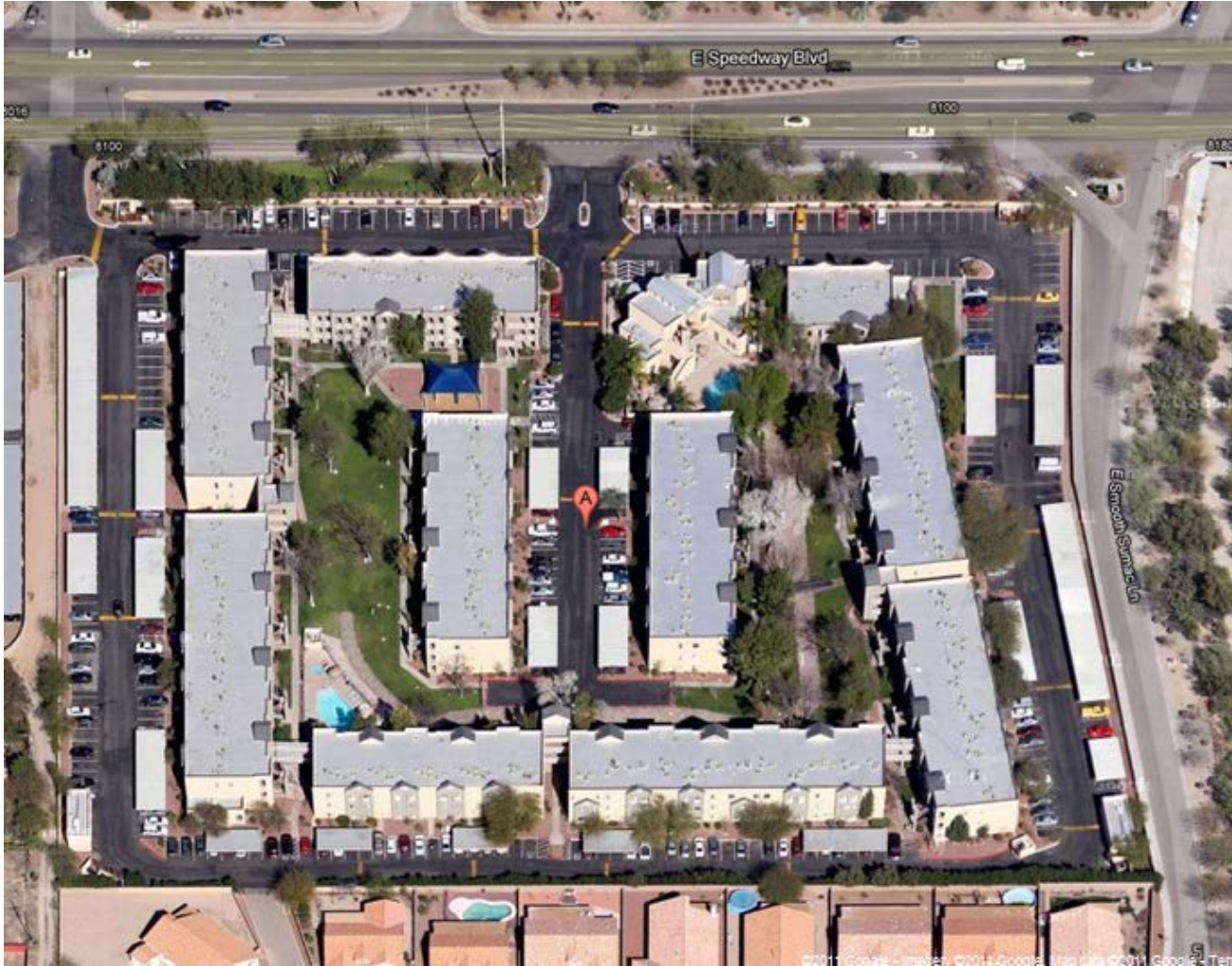
Horner's Rules for Diagnosing Problems:

1. The ASPE pressure differential Rule
2. The Proper recirculation piping Rule
3. The Return temperature Rule
4. The 80/20 water balancing Rule

#1. PSI Differential Rule – must be less than 10

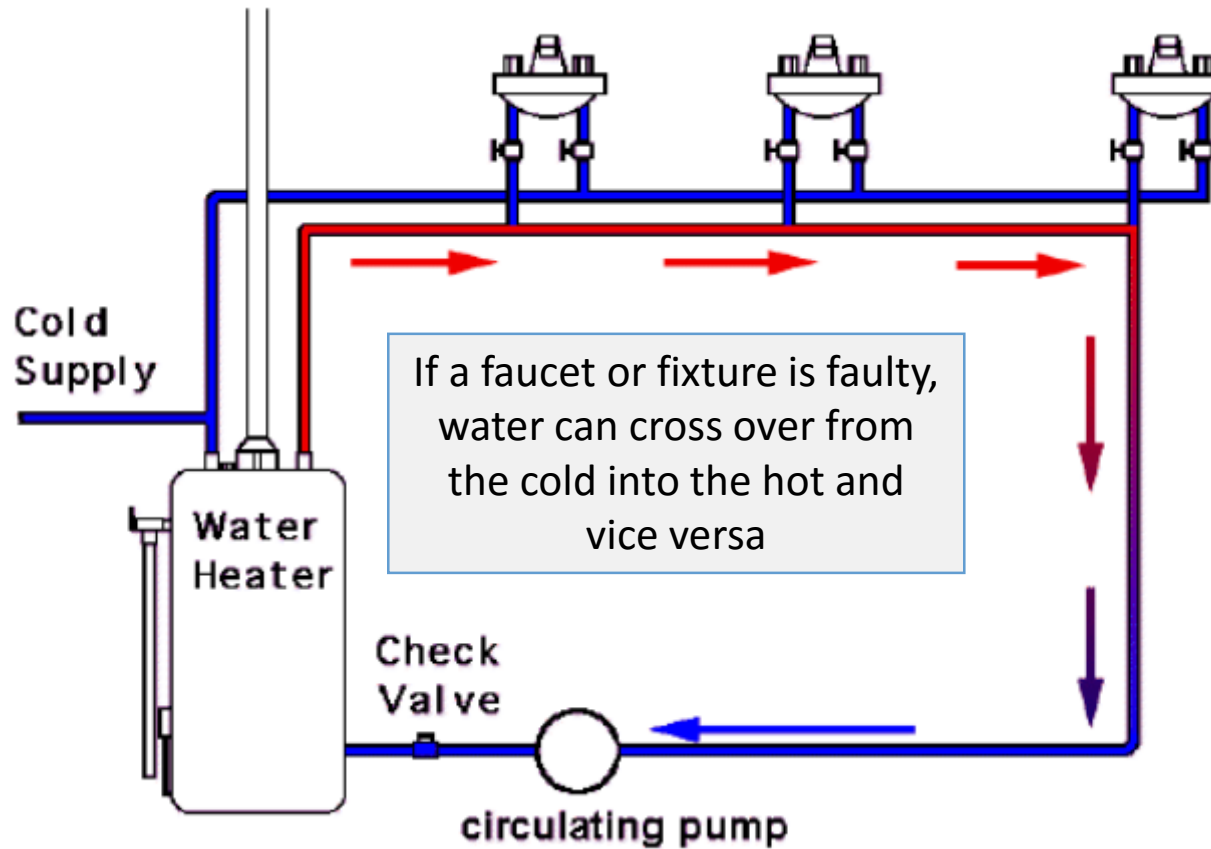








If you break this rule – CROSSOVER can occur





The 3 streams are available in selected flow rates



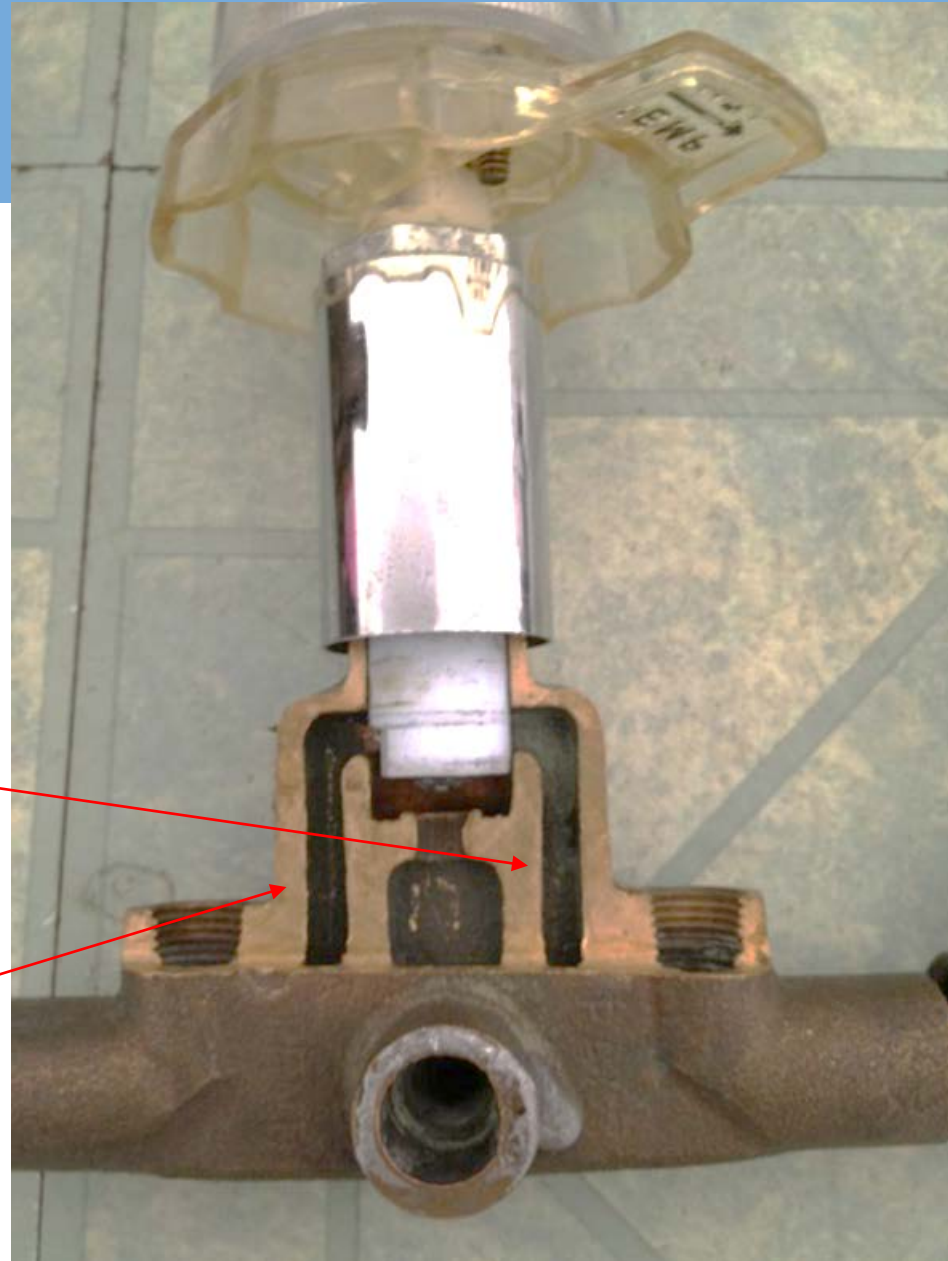
0.35 gpm	✘	✘	✔
0.5 gpm	✔	✔	✔
1.0 gpm	✔	✔	✔
1.2 gpm	✔	✔	✘
1.5 gpm	✔	✔	✘
1.8 gpm	✔	✔	✘
2.2 gpm	✔	✔	✘

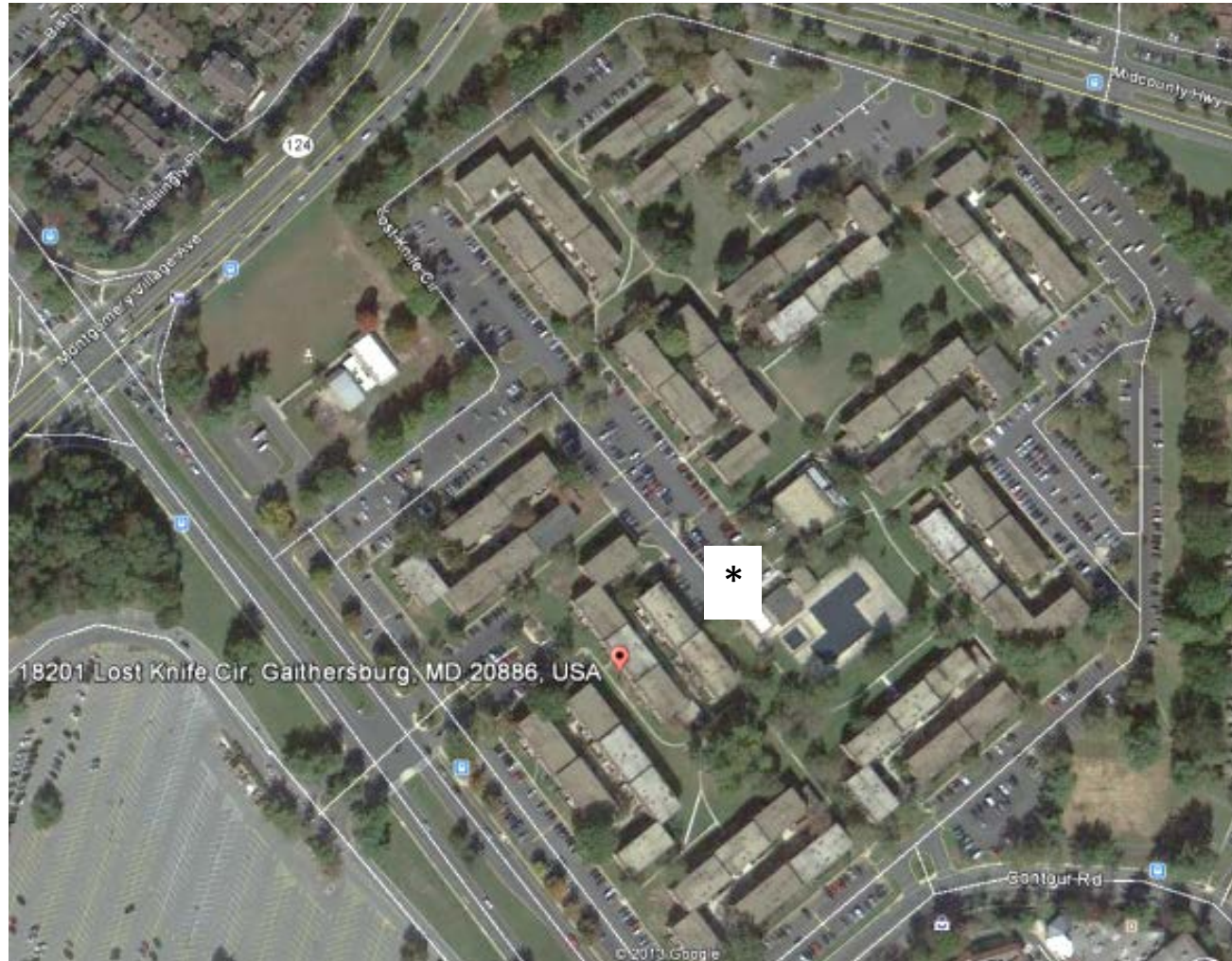


More than 6 million MIXET[®] single handle tub and shower valves have been installed in the US. These valves can develop a wear pattern which allows hot and cold water to cross over.

Hot Water Channel

Cold Water Channel





831 units,
Centralized
hot water



90 psi pre



58 psi after





The Westin Washington Dulles Airport



The Westin Dulles is an 8 story, 315 room hotel in VA near the Washington Dulles airport. There are 47 rooms per floor.

Beginning in March of 2014 and continuing throughout the rest of the year, the dual style Speakman showerheads were replaced by the Heavenly showerhead from Kohler.

The Westin Dulles





By November of 2014 the property was experiencing a major issue with hot water. In January of 2015 they returned \$10,000 in guest payments and their Westin rating went from #9 to #114. The water saving showerheads were blamed.



Boiler / Water heater



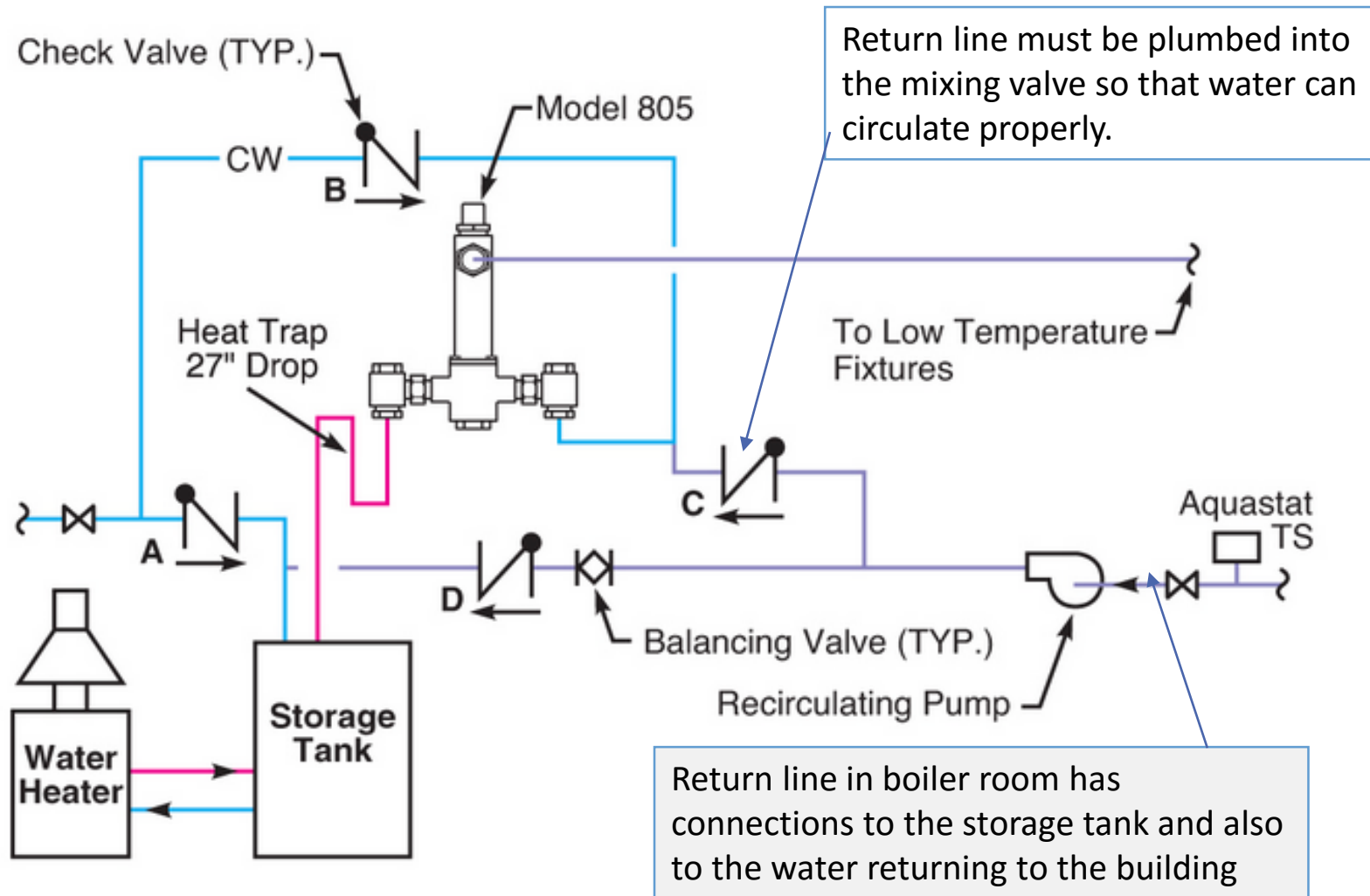
Storage Tanks



Mixing Valves



#2. The Recirculation Piping Rule





Charlotte Courtyard Marriott – Billy Graham Parkway





Compare supply temp to return temp

In the ceiling of the 1st floor hallway near the elevator on both the odd side and the even side there is a 2½” supply line and a ¾” return line.



But wait the return temperature is high – what gives





watersmart '15
INNOVATIONS

Be sure to note the Recirculation pump size



Taco - 1/8 HP Pump

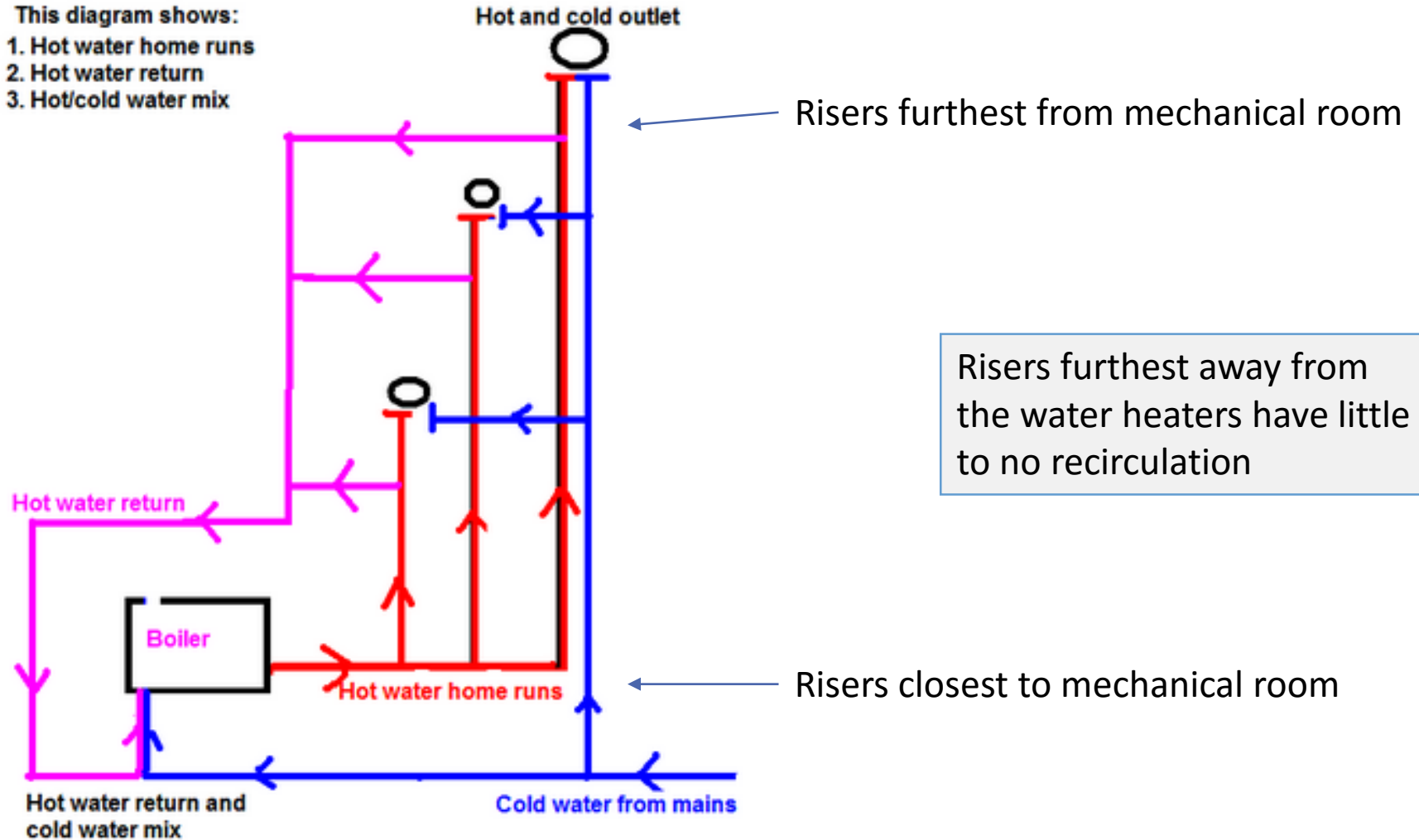
Taco
CARTRIDGE CIRCULATOR
MODEL 0013-8F3
HP 1/8 AWP 2.0 Hz 60
VOLTS 115 RPM 3250
MAX PRESSURE 125 PSI
MAX WATER TEMP 110°C 230 °F
CONFORMS TO ALL APPLICABLE
PERFORMANCE INDICATED
WARNING
TO AVOID THE RISK OF ELECTRICAL SHOCK
READ ALL INSTRUCTIONS CAREFULLY FOR PROPER
INSTALLATION. DO NOT USE IN APPLICATIONS
UNLESS SPECIFICALLY DESIGNED FOR THE APPLICATION.
CAUTION: FOR WATERSMART USE ONLY.
TACO INC. CHAMBERSBURG, PA. USA
UL LISTED CLASS 1 WATER CIRCULATING PUMP
MFG. NO. L142714



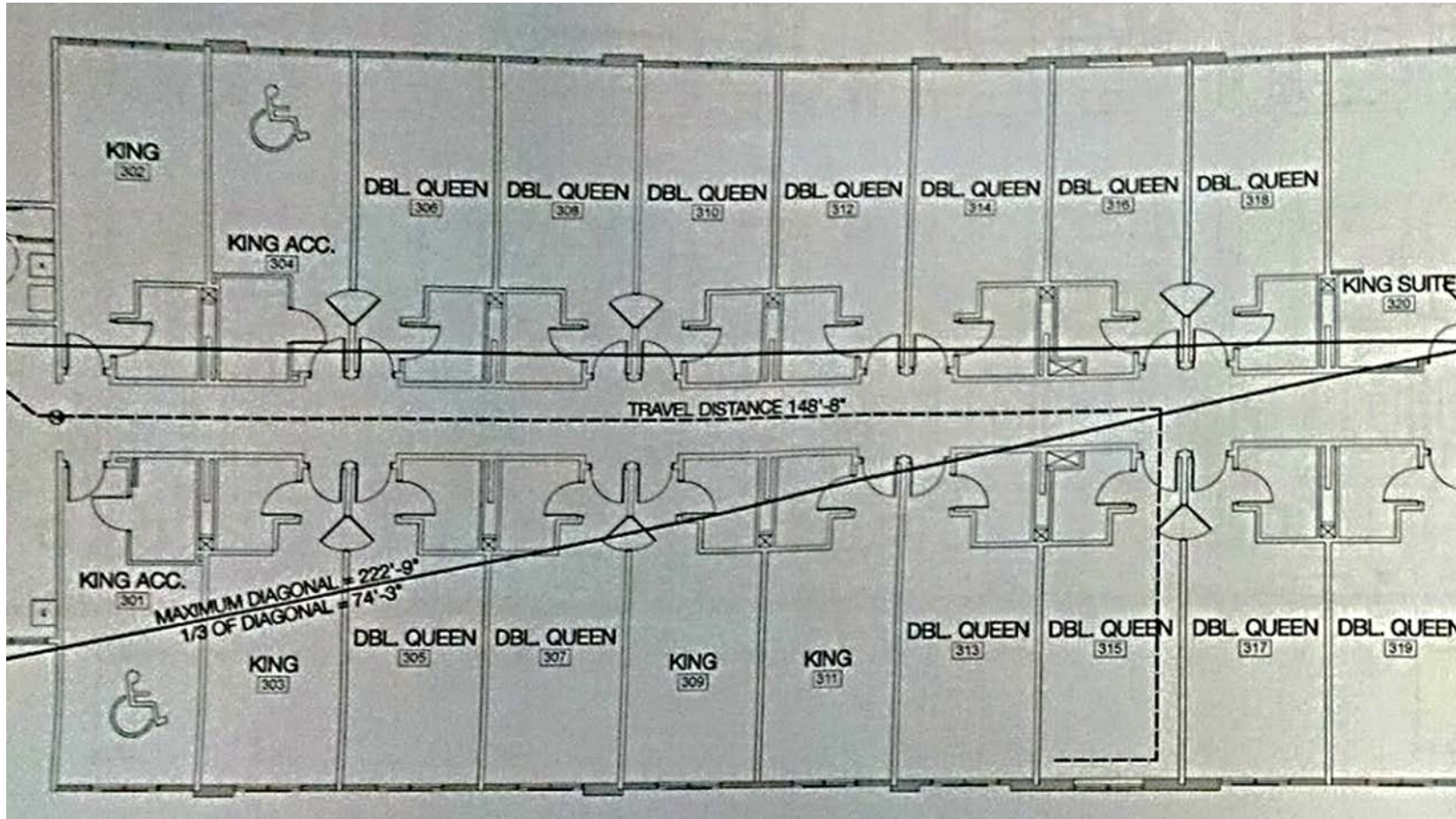
The Path of Least Resistance

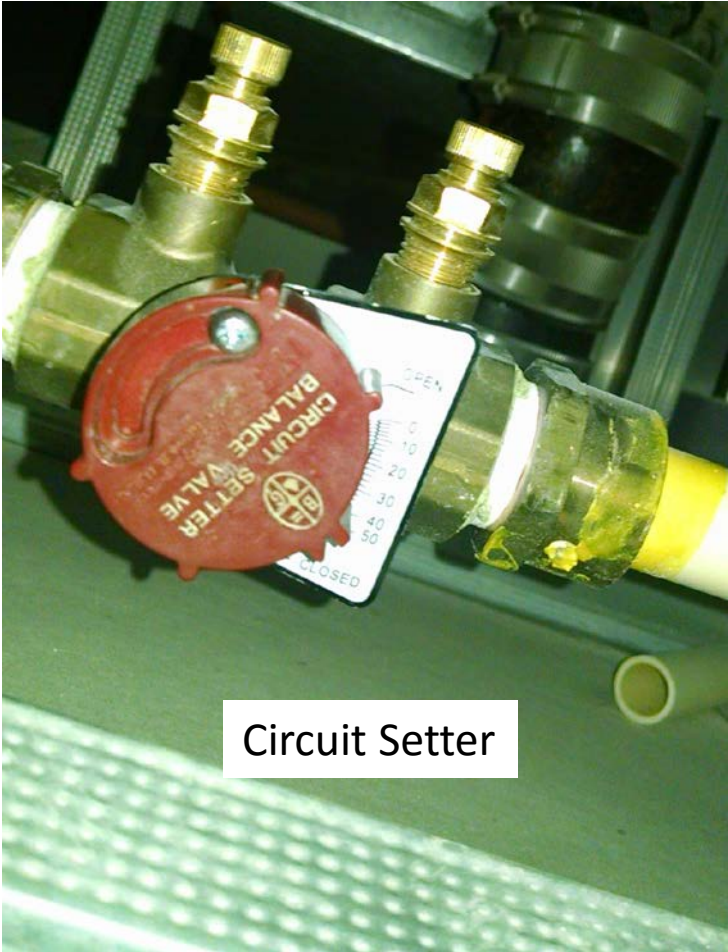
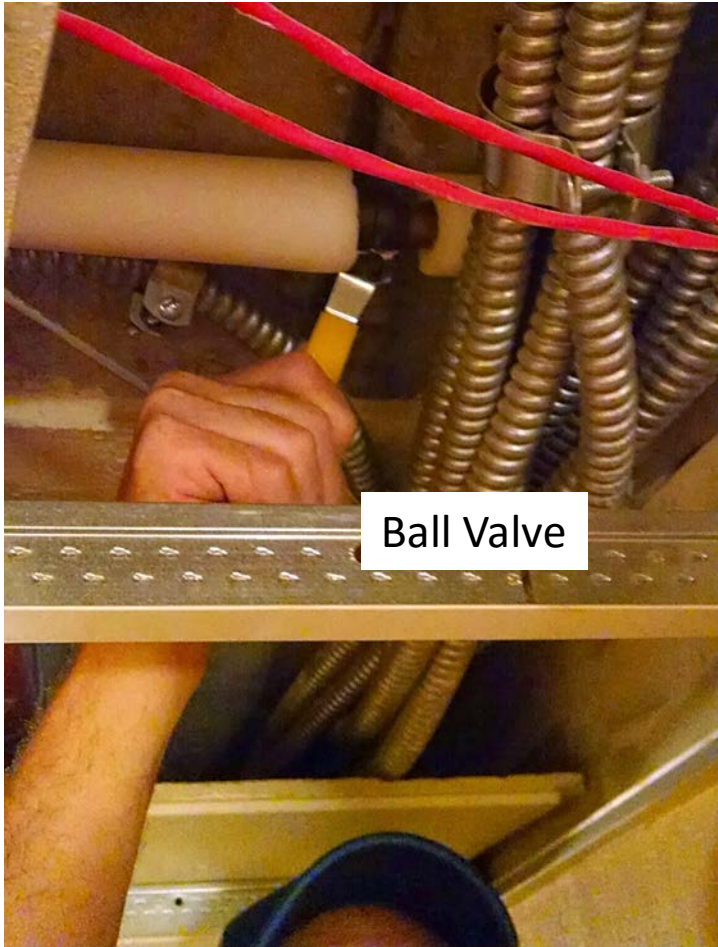


This diagram shows:
1. Hot water home runs
2. Hot water return
3. Hot/cold water mix











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