

TABLE P2903.6 WATER-SUPPLY FIXTURE-UNIT VALUES FOR VARIOUS PLUMBING FIXTURES AND FIXTURE GROUPS

FIXTURE AT POINT OF OUTLET	HOT	COLD	COMBINED
BATHTUB (WITH/ w/OUT SHOWERHEAD)	1	1	1.4
CLOTHES WASHER	1	1	1.4
DISHWASHER	1.4	-	1.4
FULL BATH GROUP w/ BATHTUB w/ w/OUT SHOWERHEAD) OR SHOWER STALL	1.5	2.7	3.6
HALF-BATH GROUP (WATER CLOSET, LAVATORY, HOSE BIB (SILLCOCK) (a))	0.5	2.5	2.6
KITCHEN GROUP (DISHWASHER & SINK w/ w/OUT GARBAGE GRINDER)	1.9	1.0	2.5
KITCHEN SINK	1.0	1.0	1.4
LAUNDRY GROUP (CLOTHESWASHER STANDPIPE & LAUNDRY TUB)	1.8	1.8	2.5
LAUNDRY TUB	1.0	1.0	1.4
LAVATORY	0.5	0.5	0.7
SHOWER STALL	1.0	1.0	1.4
WATER CLOSET (TANK TYPE)	-	2.2	2.2

P2903.1 REQUIRED CAPACITIES @ POINT OF DISCHARGE CHARACTERISTICS

FIXTURE AT POINT OF OUTLET	W RATE (GPM)	FLOW PRESSURE (PSI)
BATHTUB, PRESSURE-BALANCED OR THERMOSTATIC MIXING VALVE	4	20
BIDET, THERMOSTATIC MIXING	2	20
DISHWASHER	2.75	8
LAUNDRY TUB	4	8
LAVATORY	2	8
SHOWER, PRESSURE-BALANCING OR THERMOSTATIC MIXING VALVE	3	20
SHOWER TEMPERATURE CONTROLLED SILLCOCK, HOSE BIB	5	8
SINK	2.5	8
WATER CLOSET, FLUSHOMETER TANK	1.6	20
WATER CLOSET, TANK, CLOSE COUPLED	3	20
WATER CLOSET, TANK 1 PIECE	6	20

TABLE P2903.2 MAXIMUM FLOW RATES AND CONSUMPTION FOR PLUMBING FIXTURES AND FIXTURE FITTINGS (b)

PLUMBING FIXTURE OR FIXTURE FITTING	PLUMBING FIXTURE OR FIXTURE FITTING
LAVATORY FAUCET	2.2 GPM @ 60 PSI
SHOWER HEAD (a)	2.5 GPM @ 80 PSI
SINK FAUCET	2.2 GPM @ 60 PSI
WATER CLOSET	1.6 GAL PER FLUSHING CYCLE

(a.) A HANDHELD SHOWER SPRAY IS ALSO A SHOWER HEAD

(b.) CONSUMPTION TOLERANCES SHALL BE DETERMINED FROM REFERENCE FROM REFERENCED STANDARDS

(a.) THE FIXTURE UNIT VALUE 2.5 ASSUMES A FLOW DEMAND OF 2.5 GPM, SUCH AS FOR AN INDIVIDUAL LAWN SPRINKLER DEVICE. IF A HOSE BIB/SILL COCK WILL BE REQUIRED TO FURNISH A GREATER FLOW, THE EQUIVALENT FIXTURE-UNIT VALUE MAY BE OBTAINED FROM THIS TABLE OR TABLE P2903.6(1).

SECTION P2903

WATER-SUPPLY SYSTEM

P2903.1 WATER SUPPLY SYSTEM DESIGN CRITERIA. THE WATER SERVICE AND WATER DISTRIBUTION SYSTEMS SHALL BE DESIGNED AND PIPE SIZES SHALL BE SELECTED SUCH THAT UNDER CONDITIONS OF PEAK DEMAND, THE CAPACITIES AT THE POINT OF OUTLET DISCHARGE SHALL NOT BE LESS THAN SHOWN IN TABLE P2903.1.

P2903.2 MAXIMUM FLOW AND WATER CONSUMPTION. THE MAXIMUM WATER CONSUMPTION FLOW RATES AND QUANTITIES FOR ALL PLUMBING FIXTURES AND FIXTURE FITTINGS SHALL BE IN ACCORDANCE WITH TABLE P2903.2.

P2903.5 WATER HAMMER. THE FLOW VELOCITY OF THE WATER DISTRIBUTION SYSTEM SHALL BE CONTROLLED TO REDUCE THE POSSIBILITY OF WATER HAMMER. WATER-HAMMER ARRESTORS SHALL BE INSTALLED IN ACCORDANCE WITH THE MANUFACTURER'S INSTALLATION INSTRUCTIONS. WATER HAMMER ARRESTORS SHALL CONFORM TO ASSE 1010.

IPC PLUMBING NOTES

P1.) (IPC 306.2) PROVIDE SUPPORT FOR BURIED PIPES BY EXCAVATING 6" BELOW LEVEL OF PIPE AND BACKFILLING TO LEVEL OF PIPE WITH COMPACTED SAND OR FINE GRAVEL. BACKFILL AFTER PIPE INSTALLATION WITH SAND OR LOOSE EARTH FREE FROM ROCKS OR OTHER DEBRIS. TAMP DOWN BACKFILL AROUND PIPES IN 6" LAYERS UNTIL 12" ABOVE CROWN OF PIPE. P2.) (IPC 305.6) INSTALL BURIED PIPES MIN. 6" BELOW FROST LINE. REFER TO TOWNSHIP DESIGN PARAMETERS FOR DEPTH OF FROST LINE FOR THIS JOB LOCATION. P3.) (IPC 603.2) MAINTAIN MIN 5 FT. SEPARATION OF BURIED WATER SUPPLY PIPES AND BURIED SEWER PIPES - OR MAINTAIN WATER SUPPLY PIPES MIN. 12" ABOVE SEWER PIPES IF CLOSER THAN 5 FT.

P4.) (IPC 704.1) SLOPE MAIN BUILDING DRAIN 1/8" PER FT MIN. 1/4" PER FT. PREFERRED.

P5.) (IPC 305.5) FOR PIPES THAT PENETRATE FOUNDATION WALLS, PROVIDE PVC SLEEVES MIN. (2) PIPES SIZES LARGER THAN SUPPLY OR WASTE PIPE. PACK SLEEVE AROUND PIPE WITH RESILIENT FILLER. (G2415.4) GAS PIPING SHALL NOT PENETRATE BUILDING FOUNDATION WALLS @ ANY POINT BELOW GRADE. GAS PIPING SHALL ENTER 7' EXIT A BUILDING @ A POINT ABOVE GRADE & THE ANNULAR SPACE BETWEEN THE PIPE & WALL SHALL BE SEALED.

P6.) (IPC 308.5) SUPPORT PVC DRAIN PIPES AT MAX. 4 FT o.c. HORIZONTALLY AND 10' o.c. VERTICALLY WITH METAL STRAPS. PROVIDE METAL STRAP OR OTHER APPROVED SUPPORT METHOD AT THE BASE OF ALL WASTE STACKS.

P7.) (IPC 604.9) PROVIDE WATER-HAMMER ARRESTOR DEVICES AT ALL FIXTURES WITH QUICK-CLOSING VALVES SUCH AS WASHING MACHINES, DISHWASHERS AND ICE-MAKERS SUPPLY. P8.) UNLESS PROVIDED INTERNALLY, WATER HEATERS SHALL HAVE A HEAT TRAP ON BOTH THE INLET & OUTLET.

P8.) (P3005.2.6) A CLEANOUT IS REQUIRED AT THE BASE OF EACH SANITARY DRAINAGE STACK.

CODE RELATED IRC PLUMBING NOTES:

ALL PLUMBING WORK TO BE IN COMPLIANCE WITH THE 2009 IRC & IPC. BELOW ARE EXCERPTS & HIGHLIGHTS FROM THE 09 IRC. MECHANICAL CONTRACTORS TO REFER TO THE 09 IRC & IPC TO ENSURE FULL PLUMBING CODE REQUIREMENTS ARE MET.

P2503.6 SHOWER LINER TEST. WHERE SHOWER FLOORS AND RECEPTORS ARE MADE WATER TIGHT BY THE APPLICATION OF MATERIALS REQUIRED BY SECTION P2709.2, THE COMPLETED LINER INSTALLATION SHALL BE TESTED. THE PIPE FROM THE SHOWER DRAIN SHALL BE PLUGGED WATER TIGHT FOR THE TEST. THE FLOOR AND RECEPTOR AREA SHALL BE FILLED WITH POTABLE WATER TO A DEPTH OF NOT LESS THAN 2 INCHES (51 MM) MEASURED AT THE THRESHOLD. WHERE A THRESHOLD OF AT LEAST 2 INCHES HIGH DOES NOT EXIST, A TEMPORARY THRESHOLD SHALL BE CONSTRUCTED TO RETAIN THE TEST WATER IN THE LINED FLOOR OR RECEPTOR AREA TO A LEVEL NOT LESS THAN 2 INCHES DEEP MEASURED AT THE THRESHOLD. THE WATER SHALL BE RETAINED FOR A TEST PERIOD OF NOT LESS THAN 15 MINUTES AND THERE SHALL BE NO EVIDENCE OF LEAKAGE.

P2603.2.1 PROTECTION AGAINST PHYSICAL DAMAGE. IN CONCEALED LOCATIONS, WHERE PIPING, OTHER THAN CAST-IRON OR GALVANIZED STEEL, IS INSTALLED THROUGH HOLES OR NOTCHES IN STUDS, JOISTS, RAFTERS OR SIMILAR MEMBERS LESS THAN 1 1/2 INCHES (38 MM) FROM THE NEAREST EDGE OF THE MEMBER, THE PIPE SHALL BE PROTECTED BY STEEL SHIELD PLATES. SUCH SHIELD PLATES SHALL HAVE A THICKNESS OF NOT LESS THAN 0.0575 INCH (1.463 MM) (NO. 16 GAGE). SUCH PLATES SHALL COVER THE AREA OF THE PIPE WHERE THE MEMBER IS NOTCHED OR BORED, AND SHALL EXTEND A MINIMUM OF 2 INCHES (51 MM) ABOVE SOLE PLATES AND BELOW TOP PLATES.

P2803.3 BREAKAGE AND CORROSION. PIPES PASSING THROUGH OR UNDER WALLS SHALL BE PROTECTED FROM BREAKAGE. PIPES PASSING THROUGH CONCRETE OR CINDER WALLS AND FLOORS, COLD-FORMED STEEL FRAMING OR OTHER CORROSIVE MATERIAL SHALL BE PROTECTED AGAINST EXTERNAL CORROSION BY A PROTECTIVE SHEATHING OR WRAPPING OR OTHER MEANS THAT WILL WITHSTAND ANY REACTION FROM LIME AND ACID OF CONCRETE, CINDER OR OTHER CORROSIVE MATERIAL. SHEATHING OR WRAPPING SHALL ALLOW FOR MOVEMENT INCLUDING EXPANSION AND CONTRACTION OF PIPING. MINIMUM WALL THICKNESS OF MATERIAL SHALL BE 0.025 INCH (0.64 MM).

P2708.2 WATER SUPPLY RISER. WATER SUPPLY RISERS FROM THE SHOWER VALVE TO THE SHOWER HEAD OUTLET, WHETHER EXPOSED OR CONCEALED, SHALL BE ATTACHED TO THE STRUCTURE USING SUPPORT DEVICES DESIGNED FOR USE WITH THE SPECIFIC PIPING MATERIAL OR FITTINGS ANCHORED WITH SCREWS.

WATER SUPPLY & DISTRIBUTION NOTES:

ALL WATER SUPPLY & DISTRIBUTION WORK TO BE IN COMPLIANCE WITH THE 2009 IRC & IPC. BELOW ARE EXCERPTS & HIGHLIGHTS FROM THE 09 IRC. MECHANICAL CONTRACTORS TO REFER TO THE 09 IRC & IPC TO ENSURE FULL WATER SUPPLY & DISTRIBUTION CODE REQUIREMENTS ARE MET.

SECTION P2901 GENERAL

P2901.1 POTABLE WATER REQUIRED. DWELLING UNITS SHALL BE SUPPLIED WITH POTABLE WATER IN THE AMOUNTS AND PRESSURES SPECIFIED IN THIS CHAPTER. IN A BUILDING WHERE A NON-POTABLE WATER-DISTRIBUTION SYSTEM IS INSTALLED, THE NON-POTABLE SYSTEM SHALL BE IDENTIFIED BY COLOR MARKING, METAL TAGS OR OTHER APPROPRIATE METHOD. WHERE COLOR IS USED FOR MARKING, PURPLE SHALL BE USED TO IDENTIFY MUNICIPALLY RECLAIMED WATER, RAINWATER AND GRAYWATER DISTRIBUTION SYSTEMS. ANY NONPOTABLE OUTLET THAT COULD INADVERTENTLY BE USED FOR DRINKING OR DOMESTIC PURPOSES SHALL BE POSTED.

SECTION P2902 PROTECTION OF POTABLE WATER SUPPLY P2902.1 GENERAL. A POTABLE WATER SUPPLY SYSTEM SHALL BE DESIGNED AND INSTALLED AS TO PREVENT CONTAMINATION FROM NONPOTABLE LIQUIDS, SOLIDS OR GASES BEING INTRODUCED INTO THE POTABLE WATER SUPPLY. CONNECTIONS SHALL NOT BE MADE TO A POTABLE WATER SUPPLY IN A MANNER THAT COULD CONTAMINATE THE WATER SUPPLY OR PROVIDE A CROSS-CONNECTION BETWEEN THE SUPPLY AND A SOURCE OF CONTAMINATION UNLESS AN APPROVED BACKFLOW-PREVENTION DEVICE IS PROVIDED. CROSS-CONNECTIONS BETWEEN AN INDIVIDUAL WATER SUPPLY AND A POTABLE PUBLIC WATER SUPPLY SHALL BE PROHIBITED.

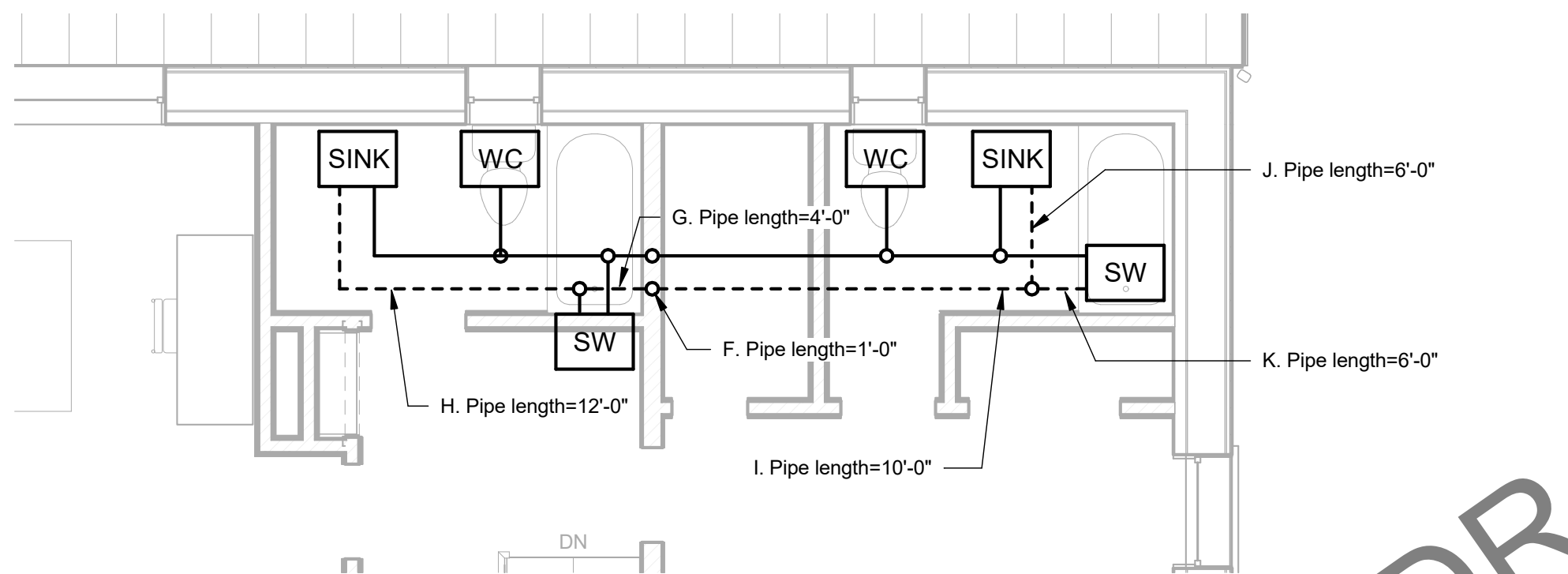
P2902.2 PLUMBING FIXTURES. THE SUPPLY LINES AND FITTINGS FOR EVERY PLUMBING FIXTURE SHALL BE INSTALLED TO PREVENT BACKFLOW. PLUMBING FIXTURE FITTINGS SHALL PROVIDE BACKFLOW PROTECTION IN ACCORDANCE WITH ASME A112.18.1.

P2902.3 BACKFLOW PROTECTION. A MEANS OF PROTECTION AGAINST BACKFLOW SHALL BE PROVIDED IN ACCORDANCE WITH SECTIONS P2902.3.1 THROUGH P2902.3.6. BACKFLOW PREVENTION APPLICATIONS SHALL CONFORM TO TABLE P2902.3, EXCEPT AS SPECIFICALLY STATED IN SECTIONS P2902.4 THROUGH P2902.5.5.

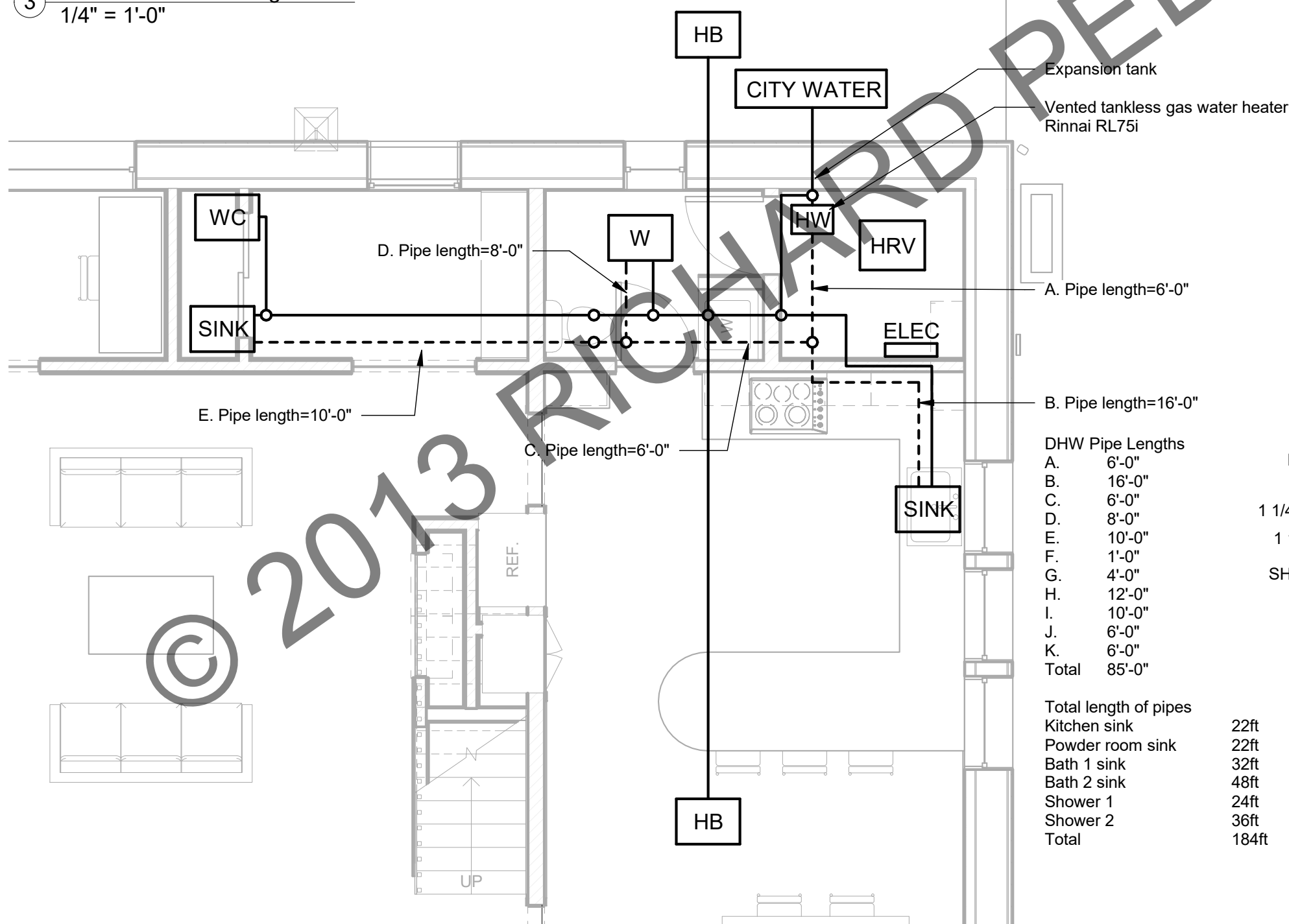
P2902.6 LOCATION OF BACKFLOW PREVENTERS. ACCESS SHALL BE PROVIDED TO BACKFLOW PREVENTERS AS SPECIFIED BY THE MANUFACTURER'S INSTALLATION INSTRUCTIONS.

P2902.6.1 OUTDOOR ENCLOSURES FOR BACKFLOW PREVENTION DEVICES. OUTDOOR ENCLOSURES FOR BACKFLOW PREVENTION DEVICES SHALL COMPLY WITH ASSE 1060. P2902.6.2 PROTECTION OF BACKFLOW PREVENTERS. BACKFLOW PREVENTERS SHALL NOT BE LOCATED IN AREAS SUBJECT TO FREEZING EXCEPT WHERE THEY CAN BE REMOVED BY MEANS OF UNIONS, OR ARE PROTECTED BY HEAT, INSULATION OR BOTH.

P2902.6.3 RELIEF PORT PIPING. THE TERMINATION OF THE PIPING FROM THE RELIEF PORT OR AIR GAP FITTING OF THE BACKFLOW PREVENTER SHALL DISCHARGE TO AN APPROVED INDIRECT WASTE RECEPTOR OR TO THE OUTDOORS WHERE IT WILL NOT CAUSE DAMAGE OR CREATE A NUISANCE.



3 Second Floor Plumbing Plan
1/4" = 1'-0"



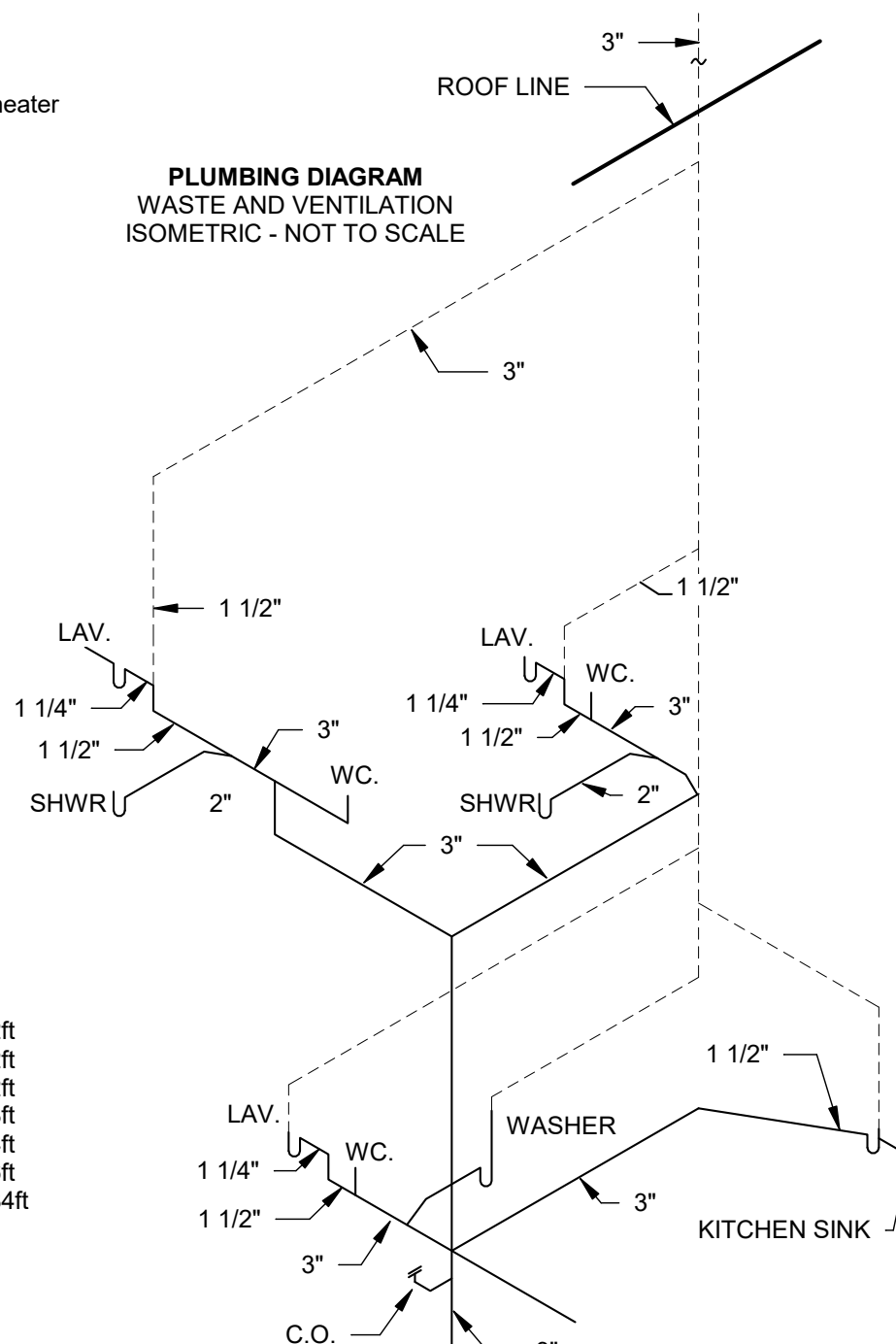
1 First Floor Plumbing Plan
1/4" = 1'-0"

DHW Pipe Lengths

A.	6'-0"
B.	16'-0"
C.	6'-0"
D.	8'-0"
E.	10'-0"
F.	1'-0"
G.	4'-0"
H.	12'-0"
I.	10'-0"
J.	6'-0"
K.	6'-0"
Total	85'-0"

Total length of pipes

Kitchen sink	22ft
Powder room sink	22ft
Bath 1 sink	32ft
Bath 2 sink	48ft
Shower 1	24ft
Shower 2	36ft
Total	184ft



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KARPIAK / MULHALL RESIDENCE
1700 Pine Street Scranton, PA 18510
New residence designed to meet the Passive House Standard

PASSIVE HOUSE
Richard Pedranti is a Certified Passive House Consultant (CPHC) through the Passive House Institute US (PHIUS)

Karpiak / Mulhall
PLUMBING PLANS
Project number 12-6
Date DECEMBER 12, 2017
Drawn by RBP
P1
Scale 1/4" = 1'-0"