

PLUMBING ROUGH-IN SCHEDULE

LABEL	DESCRIPTION	COLD		HOT		WASTE	REMARKS
		WTR	WTR	WTR	WTR		
LAV	LAVATORY	1/2"	1/2"	1-1/2" DIR			COORDINATE ALL FIXTURE SELECTION WITH OWNER/GENERAL CONTRACTOR
WGH	WATER CLOSET HANDICAP URINAL	1/2"		3"			FLUSH TANK, 1.6 GALLONS PER FLUSH URINAL
WH-X	WATER HEATER	3/4"	3/4"				
FD	FLOOR DRAIN			2"			
FS	FLOOR SINK			3"			
3-COMP	3-COMP SINK	1/2"		1-1/2" IND			
HS	HAND SINK	1/2"	1/2"	1-1/2" DIR			
CO	CLEAN OUT			SIZE PER LINE			WALL OR FLUSH

PLUMBING USAGE TABLE E103.3(2)

WATER LOAD	UNITS	WASTE			WATER				
		FU	FU TOTAL	FLOW CW	FLOW HW	FLOW	COLD	HOT	TOTAL
WATER CLOSET	2	4	8	5	0	5	10	0	10
URINAL	0	4	0	5	0	5	0	0	0
LAVATORY	2	1	2	1.5	1.5	2	3	3	4
DISHWASHER	1	5	5	0	3	0	0	0	3
PRE-RINSE	0	2	0	0	1.5	2	0	0	0
1 COMP SINK	1	2	2	3	3	4	3	3	4
PREP SINK	1	2	2	3	3	4	6	6	4
MOP SINK	1	2	2	2.25	2.25	3	2.25	2	3
HAND SINK	3	1	3	1	1	1.4	2	2	4.2
TOTAL			24				26.25	16	32.2

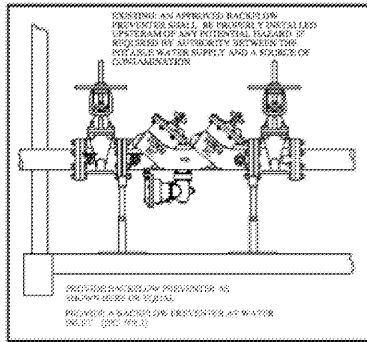
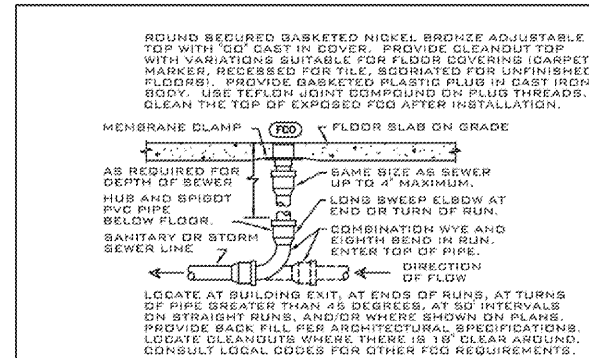
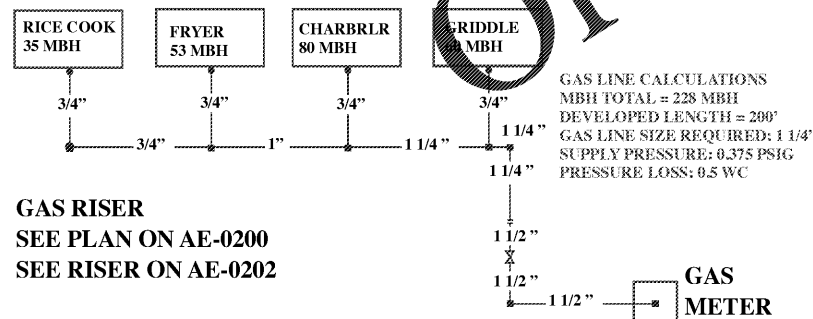
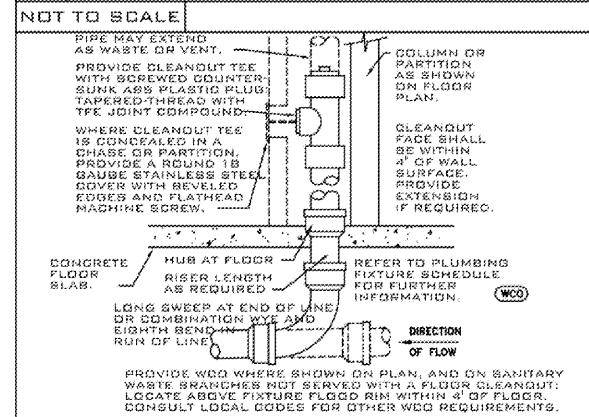


Figure 5. Reduced pressure principle backflow preventers have test cocks that allow the valve to be periodically tested. The test determines if the valve is functioning properly to protect the potable water supply against backflow.

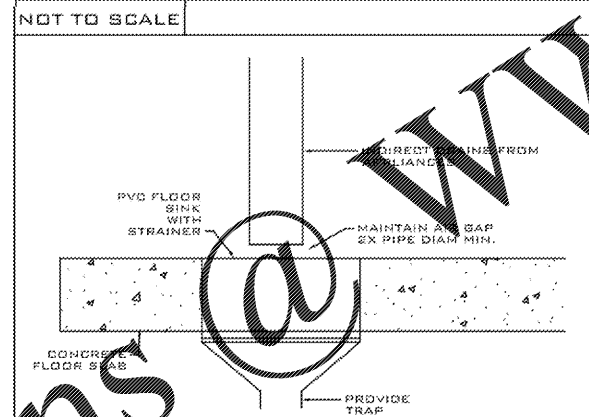
IPC 608.1 General. A potable water supply system shall be designed, installed and maintained in such a manner so as to prevent contamination from non-potable liquids, solids or gases being introduced into the potable water supply through cross-connections or any other piping connections to the system. Backflow preventer applications shall conform to Table 608.1, except as specifically stated in Sections 608.2 through 608.16.9.



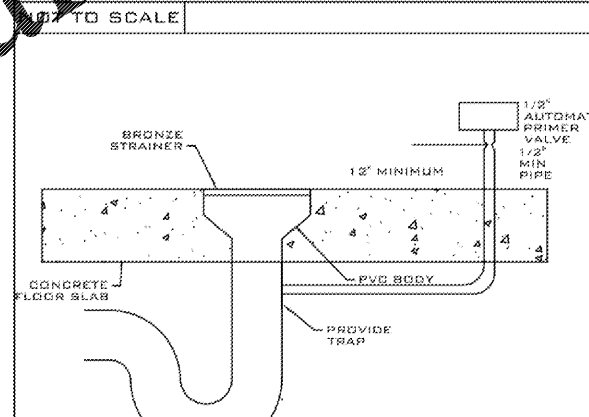
1 FLOOR CLEANOUT



2 WALL CLEANOUT



3 FLOOR SINK DETAIL



4 FLOOR DRAIN DETAIL

NOT TO SCALE

PLUMBING

1.1 DESCRIPTION OF THE WORK

A. Work under this section includes, but is not necessarily limited to, furnishing and installing the following:

1. Plumbing fixtures, water heaters, and any other equipment necessary.
2. Cold and hot water piping and insulation.
3. DWV piping.

B. All work under this contract shall be installed in compliance with the latest edition of the follow codes and standards insofar as they apply.

1. IPC 2012
2. 2012 N.C. Building Code
3. American Society of Sanitary Engineering Standard 1010.
4. All local codes and ordinances.

C. These codes are minimum standards. If codes require a more stringent method of construction than the specification require, the codes shall govern.

D. The Plumbing Contractor shall be licensed in the State of North Carolina and have all local licenses required for the work.

E. Obtain all permits, licenses, inspections, etc., required for the work, and pay for the same.

1.2 INTENT

A. The intent of these specification and accompanying drawings is to convey as reasonably as possible the requirements for a completed job ready for occupancy. The Plumbing Contractor shall take this into consideration and include in this base bid allowance for contingencies as well as allow for minor pieces of equipment and labor not specifically additional cost to the Owner.

1.3 COORDINATION

A. Coordinate work with other contractors. Notify Architect of apparent conflicts early to expedite construction. If structural damage appears imminent, stop work and notify Architect for a decision before resuming operations.

B. Locations shown are approximate. The Plumbing Contractor shall refer to the architectural drawings for placement of equipment, fixtures, and etc., the exact location from the Architect.

1.4 SHOP DRAWINGS

A. Shop drawings shall be submitted for plumbing fixtures and for pipe. These may consist of the manufacturer's standard catalog or tear sheets and shall have the exact items being offered clearly identified.

Part 2 - Products Note.

2.1 FIXTURES

A. Each fixture shall be properly supported from the building structure as required, and the effect that all fixtures and accessories will be held rigidly in place. Water pipes supplying the fixtures must also be held rigidly in place.

B. Provide loose key angle stops and chrome plated supply pipe over supplies to fixtures.

C. All exposed piping traps and accessories for fixtures shall be chrome plated. Provide chrome plated escutcheon plates where pipes enter walls.

D. Provide shutoff valves for all show water heaters, toilets, dishwasher, refrigerator, icemaker, and exterior hose bibbs.

2.2 PIPING

A. Drain waste: All waste piping shall be schedule 40 PVC-DWV.

B. Hot and cold water piping above grade: Copper Type "L" copper with solders joints with wrought copper fittings (ANISI B 16.22) With solder joints. (ASTM-88P). Hard drawn with wrought copper fittings (ANSI B16.22), PEX with compression fittings (ASTM F1281), CPVC (ASTM D2846)

C. Cold water piping below grade: Type "K" copper (ASTM-88A) soft drawn.

D. Hangers: All pipe hangers where required on 8-foot centers saddles to avoid crushing insulation.

E. Solder: 95/5.

F. Unions: Provide union where indicated on drawings. In long runs of piping (except drainage), and at equipment to provide convenient disassembly. Provide dielectric union when connecting copper tubing to equipment and piping made of ferrous materials.

2.3 CLEANOUTS

A. Hex plugs in rough areas: Recessed plugs with brass cover plates in exposed location.

2.4 SHOCK ARRESTERS

A. Provide shock arresters as required by codes, manufactures recommendations and accepted industry standards for qualify construction. Provide on all lines with quick closing valves.

PART 3 - EXECUTION

3.1 CONNECTIONS

A. This contract includes complete connection of cold water, hot water, drainage, and vent piping as required. All fittings valves, accessories, cutoffs, drains, etc., required to complete such connections shall be included.

B. The connection to water closets shall be made water tight with gasket and wax ring. Floor flanges shall be caulked into position. Plastic caps shall be provided on the tie down bolts, and shall be secured in place by screwing down on threaded brass washers.

C. Where water pipes connect to exposed chrome plated trim, use proper chrome plated escutcheons.

3.2 SERVICE ACCESS

A. All valves and accessories shall be insulated so that they can be properly serviced. In no case shall the Plumbing Contractor install equipment or other component in situations that do not meet code requirements or manufacturer's requirements. Provide access doors as required to access valves, etc.

3.3 ROUTING OF PIPING

A. Coordinate routing of piping with others; line up work true to or at right angle to adjacent surfaces and in workmanlike manner. Support all interior piping from building structure by means of hanger or inserts to maintain pitch of lines to prevent vibration, and to secure piping place.

B. Space pipe hangers 8'- 0" on center for one inch and smaller pipe, 4'- 0" on center for 1-1/4 inch and larger pipe. Provide expansion loops as required.

C. Pipe hangers for insulated lines shall have suitable saddles to protect insulation.

3.4 INSULATION

A. All H/W and C/W piping shall be insulated with a min. of 5/8" inch electrometric insulation and within building insulation. See NCSBC for requirements.

3.5 INSPECTION AND TESTS

A. Before being concealed, all water, soil and vent piping shall be tested to determine if they are water, and airtight.

B. Prior to placing into service, entire system shall be tested for leaks in strict accordance with state and local codes.

3.6 STERILIZATION OF PIPING

A. Sterilize the entire water system thoroughly with a solution containing not less than 50 parts per million of available chlorine, using liquid chlorine, or sodium hydrochloride solution. Introduced into the system in an approved manner. The sterilizing solution shall remain in the system in an approved manner. The sterilizing solution shall remain in the system for a period of 24 hours. After sterilization, flush the solution from the system with clean water until the residual chlorine content is not greater than 0.2 parts per million, unless otherwise directed.

3.7 DRAINDOWN

A. Contractor to provide for complete plumbing system drain down.

3.8 CLEAN UP

A. During construction, keep the site clear of debris and upon completion, and before final inspection, clean up the premises to remove all evidence of his work. In addition, upon completion of construction, clean, wash, and /or polish all fixtures, equipment and exposed material and leave them bright and clean.

3.9 GUARANTEES

A. Guarantee all materials and labor included in the plumbing work for a period of one year from date of final acceptance by the Owner.

B. Any defects in the system, which become evident drain the guarantee period shall be corrected without cost to the Owner. This shall include the replacing of defective materials where required, and the repair of damage caused by leaking pipes, etc., and damage to building surfaces caused in making repairs.